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# Personality Characteristics of Alcoholics

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PERSONALITY CHARACTERISTICS OF ALCOHOLICS

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A Thesis

Presented to

The Faculty of the Department of Psychology

Municipal University of Omaha

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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By

Robert W. Arms

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## ACKNOWLEDGMENTS

The impetus for the work which the following pages represent resulted from an informal discussion with Dr. Claude E. Thompson concerning psychological problems which would be worthy of investigation. In some way the discussion turned and revolved around the problem of alcoholism and the similarity between alcoholics. This was the beginning of the study reported here.

Between the inception and the completion of the study, the author is indebted to many persons whose guidance, counseling, cooperation, and assistance helped make this investigation possible. The author acknowledges with a feeling of appreciation and gratitude to all who have assisted, and particularly to the following:

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My wife, Katherine, who so willingly relieved me of many tedious details, and for her persistent and continuous encouragement.

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## INTRODUCTION

In recent years there has been an increased scientific interest in the obsessive and compulsive use of ethyl alcohol--alcoholism. Concomitant with this increased interest in the alcoholic, there has been a decreasing tendency to regard alcoholism as moral turpitude, but rather to refer to it as a disease and to seek its genesis within the dynamics of the interrelated relationships of the emotional, mental, and physiological make-up of the individual. It is generally recognized that the personality is the frame-work upon which alcohol plays its role to produce the alcoholic.

Those who deal with compulsive and obsessive drinkers have generally noted a similarity within personality dynamics of the alcoholic. Many case histories attempting to discover a trait or syndrome which could be identified with the alcoholic have been analyzed. The various authors of these studies have come to various conclusions.

Several studies using single personality scales have been reported in the literature. The results from these studies have not been clear-cut. However, these studies have supplied leads for this study.

## STATEMENT OF THE PROBLEM

The purpose of this study is to determine whether or not there is a pattern of personality traits by which the alcoholic can be differentiated from the non-alcoholic, using standardized personality scales.

## HISTORY OF THE PROBLEM

Numerous analyses of clinical observation of alcoholics have been published in the psychiatric literature. The authors of these studies arrive at various conclusions. While opinions differ as to whether or not alcoholism presents a clinical syndrome, those who have analyzed and reported their observations attempt to characterize the alcoholic.

Hart (7) analyzed thirty cases of institutionalized alcoholics who were selected because of the availability of detailed records, not on the basis of personality types. The cases had been under his observation from a few days to six months. While it was not possible for him to obtain penetrating personality studies on each of the individuals under his observation, he found common features which were prominent and important in the understanding of the chronic alcoholic: "..... a want of a mature sense of responsibility, and a resultant exaggerated sense of importance in the community--ill adjusted to life, frequently with a marked cyclothymic make-up and exposed on all sides to the opportunity of alcohol oblivion....."

Carvey (3) who has been in close contact with alcoholics over a number of years, draws these conclusions to his observations:

The alcoholic is a highly sensitive, self-indulgent individual with an extremely wounded amour propre. Self-criticisms no less than adverse opinion of others is peculiarly irritating to him. He seeks to evade all responsibility for his maladjustment and blames any circumstance rather than himself. He suffers from a feeling of inferiority, and desires excessively the society, sympathy and love of his fellows.

Boastfulness and confabulation conspicuously cover his inferiority complex, while conviviality and intimate contact with his fellows afford the release of obscene wit and homosexual trends.

Alcohol, by producing euphoria, blunting the critical power and progressively relaxing inhibitions, permits a flight from reality, which up to a certain point is pleasurable, but when it is pushed too far, regression proceeds to lower psychological developmental levels and the return of the repression from these levels causes great anxiety and antisocial behavior.

A most complete and representative study of alcoholics, who have presented themselves to a private mental hospital, is reported by Wall (14). The one-hundred alcoholic cases in this study were consecutive admissions to the hospital dating from 1920 to 1933. Of these one-hundred alcoholics, thirty-three could be diagnosed in a definite clinical syndrome, twelve were diagnosed as Korsakow's psychosis, ten were diagnosed as delirium tremens, and one was diagnosed as alcoholic deterioration. Of the other sixty-seven, fifty-five were diagnosed as alcoholism without psychosis, and twelve were diagnosed as psychopathic personality with alcoholism. Referring to those sixty-seven cases, Wall finds

these traits in common:

The alcoholic is characterized by an unconscious drive or need to dominate. ... A prevailing negative, hostile feeling-tone. Strong emotions, such as resentment, defiance, hostility, are readily available and likely to appear on relatively slight provocation. ... A capacity for ecstatic peaks in which all hostile emotions become temporarily submerged in an overflow of affirmative feelings. ... A sense of loneliness and isolation. ... Feelings of inferiority and superiority which exist simultaneously in the individual. ... And a striving for perfection....

There are a number of studies of alcoholism reported in the psychological literature using objective techniques and instruments, attempting to distinguish the alcoholic from normal control groups. The findings of these studies have been inconclusive.

Of these studies, Wittman (15) reports the most comprehensive study. When comparing institutionalized alcoholics with a normal control group, using self-rating scales, she found that:

(a) chronic alcoholics appeared to be influenced in general by a hyper-critical attitude toward others; together with a lack of insight into self-motivations; (b) an apparent 'halo effect'; (c) a tendency to conventional sentimentality; and (d) a defensive feeling of self-pity which shields the ego in adverse situations.

She also found the following developmental factors and personality traits (either actual or so considered by the subject) differentiated the chronic alcoholic as a group from the control:

(a) a domineering but idealized mother and a stern, autocratic father whom the patient preferred somewhat as a child; (b) a marked degree of strict, unquestioning demand in family life,

with little latitude or freedom allowed; (c) a feeling of insecurity as evidenced by an insistent feeling of need for religious security and a strong feeling of sin and guilt; (d) marked interest in opposite sex, with many love affairs but poor marital adjustment; (e) lack of self-consciousness, together with a marked ability to get along with and be socially acceptable to others; and (f) a keyed up emotional level, resulting in work done under high nervous tension.

Using the same experimental and control groups, as in the previous study, Wittman (16) used the Humm-Wadsworth Temperament Scale. She arrives at these conclusions:

1. Chronic alcoholics are not a definitely homogenous group as far as temperament is concerned and are distinguished from a control group only roughly, with many exceptions.

2. The following picture was found to be more or less characteristic of the chronic alcoholic. He has comparatively weak degree of restraint, mental poise, and stability, so that he has difficulty in controlling his moods and desires, as well as their overt expression. He is somewhat more selfish, conceited, and hence more anti-social than the average individual, but not significantly so. He has relatively strong cycloid tendencies, and therefore shows pronounced swings in mood and activity, together with distractibility and lack of attention. His moods alternate between euphoria and happy-go-lucky optimism, together with heightened activity (retardation) at the other extreme. According to this study, he is not particularly shy, sensitive or given to day dreaming, but since exactly the opposite results have been found, further study should be made of this point. The characteristic that definitely distinguishes him from the average is his paranoid tendency. He is consequently suspicious, self-conceited, stubborn, scornful of the ideas of others, and steadfast in his adherence to his own ideas.

3. No conclusion can be drawn from this particular study as to whether the above picture is characteristic of the fundamental personality trends of the chronic alcoholic, or is a picture of temperament modified and fostered by alcoholic excess. This point is left to be answered by further study.

Lentz (10) finds these differences between the drinker and the non-drinker:

1. More inclined to smoke and drink coffee.
2. More liberal, apparently, except with respect to the participation of women in non-domestic affairs.
3. Less optimistic and less happy, being more inclined to moodiness.
4. More maladjusted socially and emotionally. Some of these maladjustments refer to conditions existing prior to the age at which they might reasonably expect to have started drinking.
5. More tolerant of breaches of generally accepted moral conduct.
6. More international, except with respect to race prejudice.
7. More materialistic and more selfish.
8. More impulsive and affectionate according to their own estimation.
9. More interested in the opposite sex.
10. More interested in adventurous and active recreational activities than in prosaic pursuits.
11. Less favorably inclined toward churches and religious activities.
12. More militaristic.

Hewitt (8) using the Minnesota Multiphasic Personality Inventory, studied fifty-two alcoholics; thirty-seven were male members of Alcoholics Anonymous. Hewitt draws these conclusions:

Alcoholic addiction in groups studied in this survey, seems to be associated with but few exceptions, with personality disorders. Even those exceptions are doubtless more apparent than

real. There were very few whose drinking was exogenously determined and whose habituations were brought about chiefly by long exposure to alcohol.

Nearly all the alcoholic addicts showed marked psychopathic deviations which were often associated with neurotic, paranoid, or schizoid trends.

Halpern (6) summarizes the test results of forty-seven whom she tested with Wechsler-Bellevue, Rorschach, Goodenough Man Drawing Test, a vocational interest scale designed for the study, and a level of aspiration test, arrives at these conclusions:

... the alcoholic appears to be poorly adjusted, unstable, restless individual. Unlike many poorly integrated people, he does not withdraw in the face of disturbing situations, nor does he resort to the usual adjustive or neurotic forms of behavior in his response to them. Rather he reacts to various stimuli as to a challenge. He seems to want to take chances, to expose himself to difficulties and to indulge in all manner of experiences. He refuses to recognize his inadequacies in handling various circumstances and denies any conflict within himself. All is externalized and worked out in the environment. Yet basically it appears that the alcoholic desired a passive role. There would seem to be an element of self-punishment in his repeated exposure to all sorts of emotional hazards and activities. He seems to be constantly on trial before himself and has a compulsive need to prove himself to himself if not to the rest of the world.

These various conclusions drawn from clinical observations, while not in total agreement, have aspects in common, and on close examination their various authors describe in different terminology many similar components of the alcoholic personality. Also the several attempts to measure personality traits with objective instruments



tend to bear out the clinical observation, although the statistical evidence with few exceptions does not indicate conclusively trait differences between normal control groups.

All the authors of alcoholic studies appear to be in agreement with the statement that the alcoholic is ill-adjusted to life in general, and presents deep-seated personality disorders. Hart (7) definitely states this observation. Hewitt (8) and Halpern (6) find some objective evidence for making a similar statement. Lentz (10), while not working with the compulsive drinker, finds evidence for the moderate to heavy drinkers to tend to be more emotionally and socially maladjusted than the non-drinkers in his study. While the other authors do not definitely make this statement, they imply in their conclusions that they could be in agreement with such a statement.

Though common agreement ends with the acknowledgment that alcoholism is a problem revolving around deep-seated personality disorders, there are elements of similarities, closely associated with a personality variable which Murray (11) calls narcissism. He describes the variable as follows:

Narcism (or Egophilia) is technical for self-love. The term designates the object upon which positive cathexes are localized, namely the self. It is often accompanied by obliviousness or disrespect of others.

Direct manifestations. (1) Self-absorption, self-admiration, self-pity, autoerotism; (2) Superiority feelings and delusions of grandeur; (3) Self-display and extravagant demands for attention, praise, honour, aid, compassion or gratitude;

and (4) Susceptibility to neglect or belittlement, hypersensitiveness, excessive shyness and delusions of persecution.

Indirect manifestations. (1) Ruthless self-seeking, demands for benefits, attempts to dominate and demonstrate power, delusions of omnipotence; (2) Object depreciation: indifference, belittlement, exploitation, suspicion or hatred of others, misanthrope; and (3) Egocentricity and projectivity: the perception and apperception of the world from an entirely personal or subjective standpoint.

Murray elaborates further on projectivity,

...Projectivity describes egocentricity in perception, apperception and conception. The S 'projects' into others his own wishes, fears, interests, and pet theories. He may be animistic towards the animate. Common signs are these: The S misinterprets events, gives fantastic explanations, seriously ascribes various motives to others on insufficient evidence (people seem to be looking at him, praising him, blaming him, scorning him, plotting to injure him, etc.). He quarrels with people because of some trivial misunderstanding. His thinking is guided by sentiment, he sees his theories exemplified by the course of events, is dominated by prejudice, and influenced by 'halo' tendencies. He holds beliefs that conform to hopes or worries, is unable to see another person's point of view, misinterprets his own behaviour, refuses to admit the operation of bias. In extreme cases hallucinations and unmistakable delusions occur.

Hart (7), Carver (3), Wall (14), Tiebout (13), find clinical evidence for a number of components of Murray's variable of personality, narcissism. Wittman (16), Lentz (10), and Halpern (6) find some objective evidence to substantiate the clinical observation of this trait. It will be noted that most of these described characteristics are involved in measurements which have not shown statistically significant differentials. However, a strong tendency existed to enable the trait to be associated with the alcoholic personality, and this tends to substantiate clinical observation.

Wall (14) makes a clear-cut identification with Murray's variable, narcissism. He refers to alcoholics as narcissistic individuals. Wall also observes a lack of consideration for others which is highly suggestive of the narcissistic person. Wittman (16) and Lentz (10) substantiate Wall's observation, finding objective evidence for selfishness to be an alcoholic tendency. However, they failed to find this tendency within the frame-work of a significant trait.

Superiority feelings, a direct manifestation of Murray's narcissism is noted by Hart (7), Carver (3), Wall (14), and Tiebout (13). Hart refers to it as an exaggerated feeling of self-importance, suggesting it results from an immature sense of responsibility. Wall observes a craving for a blissful state of infant omnipotence. Both Carver and Tiebout observe feelings of superiority overlaying feelings of inferiority. Carver notes boasting and confabulation covering an inferiority complex. Tiebout perceives superiority feelings and inferiority feelings existing together, and suggests superiority attitudes are compensations for feelings of inferiority. Wittman substantiates these observations with significant objective evidence on the Humm-Wadsworth Temperament Scale, finding self-conceitedness an important factor in producing a significant difference on the paranoid scale.

Murray does not link feeling of inferiority with narcissism, but rather associates it with its antipole, ego depreciation. Inferiority feeling, however, is the only trait described with this variable which has been described as a tendency of the

alcoholic. It is notable that other qualities associated with Murray's antipoles of narcissism are conspicuously absent in any generalization of the alcoholic personality.

Projectivity, an indirect manifestation of Murray's narcissism is noted by Carver, and is described by him as evasiveness, on the part of the alcoholic, in accepting any responsibility for his maladjustment, blaming any circumstance rather than himself. Halpern finds some objective evidence for this tendency, finding that all problems are externalized and are worked out in the environment. Associated with the projective trait, Murray links "halo" tendencies and the inability to see others' point of view. Wittman notes these tendencies in the group of alcoholics she studied, finding the inability to see the other person's point of view related to the significant paranoid trait.

Self-pity, another direct manifestation of narcissism is noted by Wittman. She observes that self-pity is an apparent defense mechanism which shields the ego in adverse situations. Wittman is the only author definitely to observe and state this tendency.

Other tendencies have been noted by single authors which are within the limits of Murray's narcissism. Wittman finds a suspicious nature. This finding is also linked with the significant trait, paranoia. An unconscious drive or need to dominate is noted by Tiebout. Halpern is in disagreement with this observation, noting that basically the alcoholic desires to play the passive role.

Murray's variable emotionality, ranks next in terms of agreement among the various students of the alcoholic personality. However, in no area have any components of this variable been related to a significant measurable trait of personality.

Hart, Carver, Wall, and Seleger and Rosenberg observe tendencies associated with this variable. Wittman and Halpern find some evidence to support these observations.

Hart observes a marked cyclothymic make-up in the alcoholic personality. This observation is substantiated with some objective evidence in Wittman's study. She finds a relatively strong cycloid tendency, varying from euphoria and heightened activity to gloominess and lessened motor activity.

A number of tendencies falling within the pale of Murray's emotionality have been noted, but lack substantiation within measurable traits. Carver notes anxiety, explaining its cause to be due to the results of repressions. Impulsiveness and inability to postpone gratification are observed by Wall. Seleger and Rosenberg notice a general tendency for the alcoholic to be guided by emotional rather than intellectual domination. Wittman finds a keyed-up emotional level resulting in work being performed under high nervous tension. Lentz, in his study of the moderate to heavy drinker, finds that the drinkers have more inclinations to moodiness than do the non-drinkers.

Several authors of alcoholic personality studies have noted tendencies related to the ability to associate with other persons harmoniously. These tendencies are less clearly associated with any traits defined by Murray. However, the trait defined by him which is most closely congruent to these tendencies is his variable named affiliation. Carver notes an expressed need in the alcoholic to seek the society, sympathy and love of his fellows. Wittman appears to find a marked ability in achieving this need, finding it linked with a lack of self-consciousness.

It has also been inferred that the alcoholic harbors antisocial attitudes and tendencies. Carver noted antisocial behavior, explaining its cause as the result of repressions. Wittman infers that there are antisocial tendencies in the alcoholic resulting from selfishness and conceit. Closely associated with antisocial tendencies, Wall observes a lack of social feeling and consideration for others.

Other trait tendencies, not within the delineations of Murray's variables, have been observed and to some degree substantiated. Wall notes that similar traits which characterize the alcoholic suggest the constitutional psychopathic type of personality. Hewitt, using the Minnesota Multiphasic Personality Inventory, found that nearly all addicts showed marked psychopathic deviation and this was often associated with neurotic, paranoid or schizoid trends.

Other characteristics, of the alcoholic personality, have been noted by single authors. Tiebout has noted a

striving for perfection. Closely associated to this, Halpern finds a compulsive need for the alcoholic to prove himself to himself if not to the rest of the world. Wittman finds a lack of insight into self motivations, feelings of insecurity, and strong feelings of sin and guilt.

## METHOD AND PROCEDURE

### Population

A group of fifty-two alcoholics comprise the population of this study. They are members of the Omaha Alcoholics Anonymous group, membership to which is self-admission that the use of alcohol is interfering with personal and social adjustment, and a sincerely expressed desire to discontinue the use of alcohol as a beverage.

The age of the group studied ranged from twenty-one years to sixty-nine years with a mean age of 42.79 and a standard deviation of 8.06 years. The mean educational level of this group is 12.06 years or high school graduate with a standard deviation of 2.87 years.

Members of the population tested were homogeneous to the extent that alcoholic beverages had interfered with the adjustment to life in general. They were a cross section of alcoholics, ranging from those who had experienced life at the lowest level of alcoholic society, to those whose drinking problem was carefully concealed from society as a whole. Their association with Alcoholics Anonymous ranged from over two years to just a few days. In the opinion of a psychiatrist who was familiar with the group tested, they represented a typical cross section of the alcoholic population.

The control groups for this study consist of those populations used by the various authors of the personality instruments in their norms.



### Psychological Instruments Used

It has been noted that the alcoholic is generally accepted to be a seriously maladjusted individual. However, tests designed to measure traits of clinically accepted syndromes have not conclusively demonstrated ability to differentiate the alcoholic. The difficulty here is probably due in some extent to the compensatory effect that alcohol has in preventing the maladjustment to pursue the normal course in becoming classifiable into commonly accepted clinical syndromes, which the previous tests have attempted to measure.

The survey of the literature revealed that the alcoholic exhibits behavioral patterns which show a close association with Murray's variable of personality, narcissism.

With these two ideas in mind, tests were chosen to include those traits, in standardized and published personality scales, which would attempt to measure elements in Murray's variable of narcissism.

Mental Ability. A measure of mental ability was obtained using Wonderlic's (17) Personnel Test, Form A. This test is a cycle omnibus test, interpreted in terms of centile rankings based on the number of correct answers obtained during a twelve-minute interval.

Personality and Temperament. Adams and Lepley's (1) Personal Audit, Form LL, measuring nine

personality traits, indicates that they measure the following tendencies:

#### Part I. Seriousness--Impulsiveness

High scores indicate a serious disposition characterized by quietness, ambition, and studiousness. Usually interests are specialized and stable. Cautiousness is often present to some degree. Socializing tends to be confined to close friends. Agreeableness and cooperativeness may be present.

Low scores indicate pronounced sociability (or the need for it), aggressiveness, and dominance. Talkativeness and impulsiveness accompanied by a carefree attitude are often present, coupled at times with a disregard for the rights of others.

#### Part II. Firmness--Indecision

High scores indicate positiveness and conscientiousness. The individual tends to be cooperative, poised, and confident. Ability to make a decision based upon facts is usually present, and issue may be taken with a person, even a superior, when he is believed to be wrong. Concentration and evaluation are easy, and recreational activities tend to be wholesome and worth while.

Low scores indicate a tendency to accept momentarily and impulsively suggestions of others. Frequently this leads to an inability to make or maintain a decision. Concentration and evaluation are often difficult, sometimes resulting in depression. Boredom may be present; recreational activities tend to be light and frivolous.

#### Part III. Tranquility--Irritability

High scores indicate evenness of temperament and lack of irritability. There is little tendency to 'fly off the handle' or become impatient. Work is ordinarily performed at a steady methodical rate without friction. Getting along well with associates, the individual is usually tranquil and confident of his abilities.

Low scores indicate readiness and unevenness of response, often accompanied by annoyance and fault-finding toward subordinates. Temperament may be erratic and peevish. Although great ambition may be present, slow advancement creates dissatisfaction.

#### Part IV. Frankness--Evasion

High scores indicate dependability, frankness, and truthfulness. Work is ordinarily performed conscientiously. Relationships with associates are usually harmonious. There is willingness to accept responsibility and expectation that others will do likewise. Rarely depressed, the individual is stable and cooperative. Scores at this level are usually associated with happiness in work and marriage.

Low scores indicate unwillingness to face reality and inability to take responsibilities. 'Passing the buck' and projecting blame on others are often present. Exaggeration, phantasy, and lying are sometimes shown. Often depressed and usually unpredictable, the individual may lack dependability and find it difficult to cooperate with others.

#### Part V. Stability--Instability

High scores indicate pronounced confidence in self and willingness to carry responsibilities. Usually stable and carefree, the person may appear bold to associates. Able to work alone or with others, self-sufficiency and dominance are usually present.

Low scores indicate a lack of self-confidence accompanied by feelings of inferiority. The individual is frequently unstable, shy, and fearful. Preferring to work with others rather than by himself, he is oftentimes depressed and subject to sudden changes in mood. Although often lacking self-sufficiency, he may seem withdrawn.

#### Part VI. Tolerance--Intolerance

High scores indicate broadminded, easy-going attitudes. Standards and ideas tend to be flexible, practical, and realistic. Working relationships are usually objective, but pleasant and harmonious. Temperament tends to be stable, confident, and smooth.

Low scores indicate strong attitudes, usually unfavorable, toward others. Intolerance and prejudice, often disguised as 'high' standards and ideals, may be present. Inferiority, peevishness, and instability are frequently found.

#### Part VII. Steadiness--Emotionality

High scores indicate normal ways of thinking. Feelings are not intense. Ordinarily not repressed, the individual is not disagreeable nor hypercritical.

Low scores indicate that the individual is atypical. Usually sensitive, feelings are volatile and deep-seated. Individualistic, creative work is preferred and the person may appear temperamental or eccentric to others. Intense and not too well-adjusted. Repression and sexual conflicts are not uncommon.

#### Part VIII. Persistence--Fluctuation

High scores indicate stable attitudes and interests with little likelihood of pronounced changes occurring after age 25. They are usually satisfied with their environment.

Low scores indicate that interests and attitudes are in a state of flux. Such changes are usually undesirable after the age of 25 and may show bewilderment and uncertainty. Suggestive of immaturity, scores at this level may go with frequent job changes. Adaptable initially to a new job, a desire for change may soon appear.

#### Part IX. Contentment--Worry

High scores indicate few unsolved problems and absence of worry about them if they do exist. The person is usually stable, cooperative, and well-adjusted to his work and social life.

Low scores indicate worry, uneasiness, and indecision brought about by unsolved problems. Lacking confidence, the individual is usually uncertain and beset by conflicts often revolving around adjustment to the opposite sex.

Johnson Temperament Analysis, Form B (9),

measuring such traits as nervous, depressive, active, cordial, sympathetic, aggressive, subjective, critical, and impulsive and described as follows:

Nervous is a trait (evidenced by) restlessness, fidgeting, tenseness, sleeplessness, tendency to worry, and faulty muscular control.

Depressive is the best known of all the traits and is properly included in most temperament tests and classifications. Since it is sometimes helped by health improvement, especially by raising a low basal metabolism by thyroid extract or sex hormones, medical examination is in order when the score is high. It is correlated positively with nervousness and improvement of either usually helps the other. It damages severely the well-being of the individual and lowers his effectiveness socially and in nearly all occupations. It may change in waves, alternating with a lesser degree or less frequently with the active trait to be discussed next. This condition is called cycloid.

Active is the trait that is shown in the dynamic, lively, hustling, life-of-the-party, 'peppy' persons well known to all. There is also in the high scores so strong a drive as to make temper manifestation a danger.

Cordial is expressive warm-heartedness. It is a trait of the highest value in promoting good social relations. It is also allied to sympathetic, but shows itself more in expression than does the sympathetic. It is a component in that which is usually called extrovert.

Sympathetic trait undoubtedly arose as a biological necessity to insure the adequate care of children. Like the cordial trait, its greatest use is producing good parenthood, courtship and marriage. It has a better usefulness in the service occupations than in competitive business. With extremely high scores, there is a danger of being made a 'sucker' or 'easy mark.'

Subjective is the trait of being highly self-centered. It may go so far that the individual

interprets many things as related to himself, although there may be no real relationship.

Aggressive is the trait which causes people to be pushful, ruthless, ambitious, conceited, persistent and determined. It is notably higher in men than in women. Aggressive with the traits, critical and subjective, make the paranoid combination.

Critical is named very naturally. Whereas the aggressive differs between the sexes, this is less true of the critical. This is one reason for separating these traits usually combined as paranoid.

Self-mastery is the tendency to make plans and carry them through relatively undeflected by impulse and caprice. It is nearly the opposite of impulsive and capricious. It involves a capacity to inhibit but also involves an ability to decide when and how much to inhibit and act accordingly. It is very low in all the insane tested.

Bernreuter's (2) Personality Inventory measures six traits which he describes as follows:

B1-N. A measure of neurotic tendency. Persons scoring high on this scale tend to be emotionally unstable. Those scoring low tend to be very well balanced emotionally.

B2-S. A measure of self-sufficiency. Persons scoring high on this scale prefer to be alone, rarely ask for sympathy or encouragement, and tend to ignore the advice of others. Those scoring low dislike solitude and often seek advice and encouragement.

B3-I. A measure of introversion-extroversion. Persons scoring high on this scale tend to be introverted; that is, they are imaginative and tend to live within themselves.

B4-D. A measure of dominance-submission. Persons scoring high on this scale tend to dominate others in face-to-face situations. Those scoring low tend to be submissive.

F1-C. A measure of confidence in one-self. Persons scoring high on this scale tend to be hamperingly self-conscious and to have feelings of inferiority. Those scoring low tend to be wholesomely self-confident and to be very well-adjusted to their environment.

F2-S. A measure of sociability. Persons scoring high on this scale tend to be non-social, solitary, or independent. Those scoring low tend to be sociable and gregarious.

### Guilford-Martin's (5) Inventory of Factors

S T D C R measures these traits as described by the authors:

S--Social introversion-extroversion.--Shyness, seclusiveness, tendency to withdraw from social contacts, versus sociability, tendency to seek social contacts and to enjoy the company of others.

T--Thinking introversion-extroversion.--An inclination to meditative or reflective thinking, philosophizing, analysis of one's self and others, versus an extrovertive orientation of thinking.

D--Depression.--Habitually gloomy, pessimistic mood, with feelings of guilt and unworthiness, versus cheerfulness and optimism.

C--Cycloid disposition.--Strong emotional fluctuations, tendencies toward flightiness and emotional instability, versus uniformity and stability of moods, evenness of disposition.

R--Rhathymia.--A happy-go-lucky, carefree disposition, liveliness, impulsiveness, versus an inhibited, over-controlled, conscientious, serious-minded disposition.

### Testing Procedure

Alcoholics Anonymous, as an organization, is devoted to helping the alcoholic to overcome his addiction to alcohol. In order to carry out its only objective, the organization

as such refrains from anything but a neutral role in political or religious affairs. Nor does it affiliate with any organization or persons attempting to study the etiology of alcoholism. However, Alcoholics Anonymous encourages members to cooperate with such organizations or persons on an individual basis, and is very generous in providing facilities for testing the individuals who wish to volunteer to cooperate with a testing program such as this. The battery of five tests was individually administered to fifty-two individuals associated with Alcoholics Anonymous, who volunteered to take the tests. A typewritten report was returned to the individual on completing the five tests.

In order to maintain the individual's anonymity and to encourage volunteering, the secretary of the group assigned numbers to the volunteering individuals, keeping the members' names and assigned numbers in her possession and strictly confidential. The reports were returned to her for distribution.

The tests were individually administered in one of the smaller meeting rooms of the Omaha organization, with the members completing the tests after two or three meetings with the test administrator.

The attitude of the testees was a very cooperative one. The testing program, previous to the actual testing, had been explained to the group. Those who took the tests were anxious to work their tests honestly. They were as much concerned



with the accuracy of their own reports as were the administrators of the testing program. Rapport was readily established with the individuals.

### Statistical Treatment of Data

Scores for all traits were obtained according to the directions in the test manuals. The weighted scores were used in scoring the Johnson Temperament Analysis.

Each trait mean of the alcoholic sample was tested for significance of difference from the trait means of the norm population, using the means and standard deviations that the test authors either published or furnished. Dr. J. P. Guilford supplied data for a normal male population with an age of thirty years to thirty-nine years.

The means, standard deviations, and standard errors of the means were calculated for each trait. Symbols used and formulas used (4):

$N =$	Number of cases
$X =$	Raw score
$M =$	Mean
$\sigma = \sqrt{\frac{\sum x^2 - (\sum x)^2/N}{N-1}} =$	Standard deviation
$\sigma_m^2 = \frac{\sigma^2}{N-1} =$	Standard error squared of the mean
$D = M_1 - M_2$	Difference between two means
$\sigma_{MD} = \sqrt{\sigma_{m_1}^2 + \sigma_{m_2}^2} =$	Standard error of the difference
$t = \frac{D}{\sigma_{MD}}$	Critical ratio or test of significance

## RESULTS

The frequency distributions for each trait measured are graphically illustrated with histograms in Figures 1-30. In red and below each histogram, there is a line representation of the trait raw score range, the loci of the mean and the standard deviation limits for the distribution (  $- \sigma$  to  $+ \sigma$  ). Below this, in green, there is a similar line representation of the normal population used in the computations. The histograms show the relationships between the sample data and the norm data.

The significance of the difference between two means was established for each trait scale using the t value or critical ratio.\* This data is presented in Table I with the means and standard deviations of the alcoholic sample and the norm population. Asterisks indicate those traits with t values at the one percent level of confidence or better, (a t value which would occur only one time in a hundred random chances). The pound sign indicates those traits with t values of at least the five percent level of confidence, (a t value which would occur only one in twenty times of random sampling). The hypothesis that there is no real difference between the means was rejected at these levels.

The distribution of Wonderlic's Personnel Test as shown in Figure 1 was slightly negatively skewed with the scores tending to cluster on the right side of the mean,

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\* See Garrett, H. E., *Statistics in Psychology and Education*, New York: Longmans, Green and Co., Third Edition, 1947, p190.

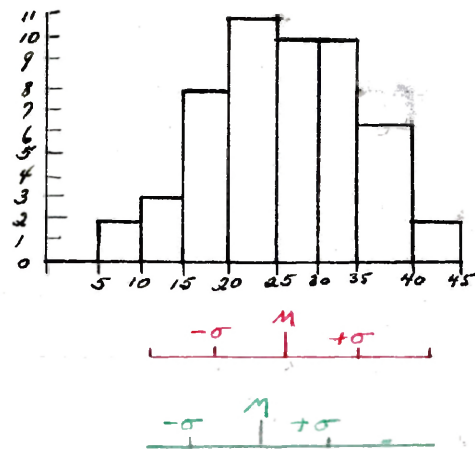


FIGURE 1  
PERSONNEL TEST

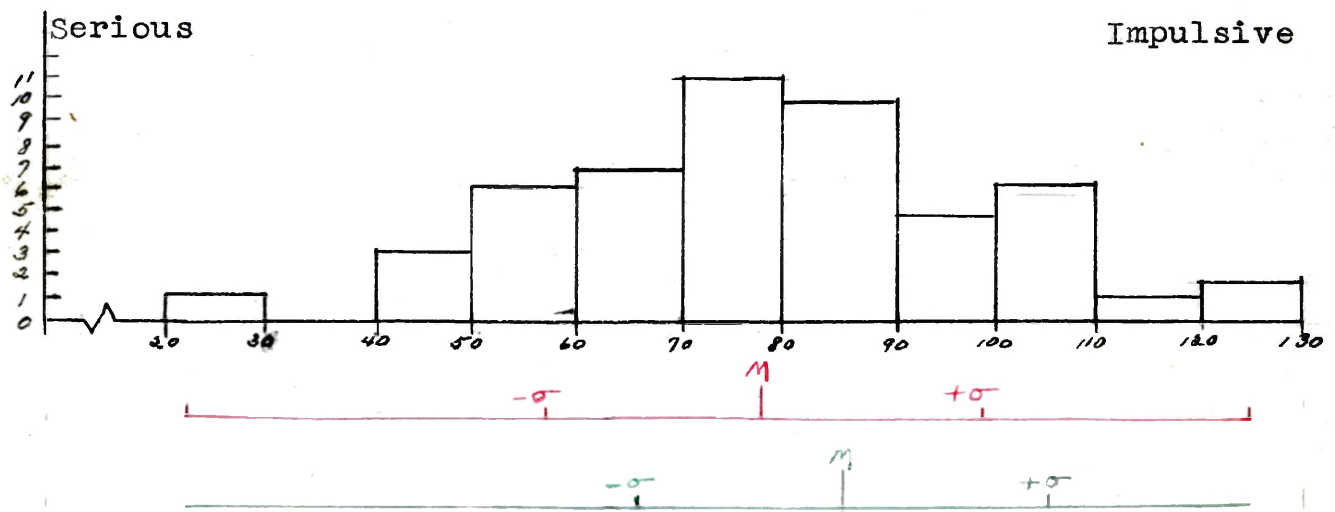


FIGURE 2  
PERSONAL AUDIT  
I

TABLE I

## MEANS, STANDARD DEVIATIONS, AND T VALUES FOR ALCOHOLIC SAMPLE AND NORM GROUP

	<u>Alcoholics</u>		<u>Norms</u>		<u>T Values</u>
	m	s	m	s	
<u>Wonderlic Personnel Test</u>	26.44	7.91	23.37	8.32	2.77*
<u>Personal Audit</u>					
I Serious <sup>o</sup> -Impulsive	78.1	20.8	86.8	20.1	2.62*
II Firmness-Indecision	37.6	13.2	35.7	11.8	.91
III Tranquility-Irritability <sup>o</sup>	104.2	19.6	86.2	20.8	5.63*
IV Frankness-Evasion	54.6	14.4	55.0	12.6	.18
V Stability-Instability <sup>o</sup>	55.6	20.9	41.5	22.8	4.09*
VI Tolerance-Intolerance <sup>o</sup>	99.4	16.5	91.3	21.8	2.79*
VII Steadiness <sup>o</sup> -Emotionality	23.0	13.2	29.4	10.4	3.17*
VIII Persistence-Fluctuation	29.4	19.6	34.6	17.3	1.69
IX Contentment <sup>o</sup> -Worry	61.9	20.0	69.1	19.9	2.25#
<u>Johnson Temperament Analysis</u>					
A Nervous <sup>o</sup> -Composed	80.00	9.91	71.17	8.97	5.35*
B Depressive <sup>o</sup> --Gay-Hearted	75.19	10.53	69.72	10.18	3.06*
C Active-Quiet <sup>o</sup>	70.65	6.76	73.33	7.13	2.25#
D Cordial-Cold <sup>o</sup>	79.38	14.53	89.59	13.16	4.20*
E Sympathetic <sup>o</sup> --"Hard-Boiled" <sup>o</sup>	82.44	6.27	86.16	5.35	3.61*
F Subjective <sup>o</sup> -Objective	81.79	8.88	71.99	8.46	6.49*
G Aggressive-Submissive	73.52	5.81	75.49	6.07	1.93
H Critical <sup>o</sup> -Appreciative	75.29	11.24	70.05	11.79	2.66*
I Self-mastery--Impulsive <sup>o</sup>	79.21	11.10	90.85	9.35	6.40*

Continued on following page

TABLE I  
Continued

	<u>Alcoholics</u>		<u>Normals</u>		<u>T Values</u>
	m	s	m	s	t
<u>Personality Inventory</u>					
B1-N Neurotic Tendency <sup>o</sup> -Lack of Neurotic Tendency	-17.6	95.5	-63.9	79.0	3.28*
B2-S Self-sufficiency--Lack of Self-sufficiency	6.8	49.3	32.3	50.0	3.41*
B3-I Introversion-Extroversion	-6.3	53.0	-28.4	50.4	2.46#
B4-D Dominance-Submission	35.9	63.9	53.9	58.0	1.89
F1-C Confidence in oneself-Lack of Confidence in oneself <sup>o</sup>	12.5	97.5	-53.4	81.4	4.74*
F2-S Sociability-Lack of Sociability	-1.4	50.1	0.2	55.6	.22
<u>Inventory of Factors STDCR</u>					
S Social Extroversion-Introversion	21.42	12.13	18.44	10.37	1.48
T Thinking Extroversion-Introversion <sup>o</sup>	39.37	8.36	31.56	9.68	5.00*
D Depressive <sup>o</sup> -Lack of Depressiveness	26.12	12.53	16.11	12.24	6.37*
C Cycloid Disposition <sup>o</sup> -Lack of Cycloid Disposition	31.81	13.01	19.61	13.42	5.28*
R Rathymia-Lack of Rathymia	40.44	12.18	38.06	10.90	1.56

\* Significant at the 1% level of confidence.

# Significant at the 5% level of confidence.

o Name of trait which tends to characterize the alcoholic.



or in the direction of the difference of the means.\* The difference of the means <sup>was</sup> were found to be significant at better than the one percent level.

The distributions of the Personal Audit trait continuums varied from normal to decidedly skewed. The Serious-Impulsive (Fig. 2), Firmness-Indecision (Fig. 3), Evasive-Frank (Fig. 5), measurements held closely to normal distributions. Contentment-Worry (Fig. 10), tended to be slightly skewed. Stability-Instability (Fig. 6), is decidedly skewed. Referring to the Figures 10 and 6, it will be noticed that the scores, of these last two measurements, tend to cluster in the opposite direction of the difference of the means. The Tranquility-Irritability (Fig. 4), and Steadiness-Emotionality (Fig. 7), scales tend to cluster in the direction of the mean difference. Two other distributions were still more decidedly clustered in the same direction as the ones above. These are the Steadiness-Emotionality (Fig. 8) and the Persistence-Fluctuation (Fig. 9) scales.

The null hypothesis was rejected for six of the scales in the Personal Audit. Five of these were significant at

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\* It is intended that "to cluster in the direction of difference of the means" be interpreted to indicate the direction of clustering in reference to the norm mean and the sample mean. If, for instance, the alcoholic sample mean is to the right of the norm mean, and the mode of the alcoholic sample is to the right of its mean, then the clustering is in the direction of the difference of the means. If the alcoholic sample mean is to the right of the norm mean, with the mode of the alcoholic sample to the left of its mean, then the clustering is in the opposite direction to the difference of the means.

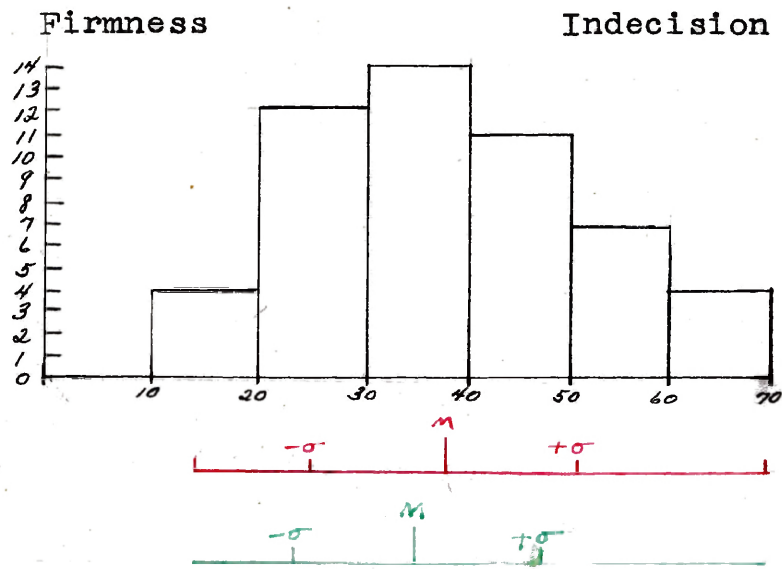


FIGURE 3  
PERSONAL AUDIT  
II

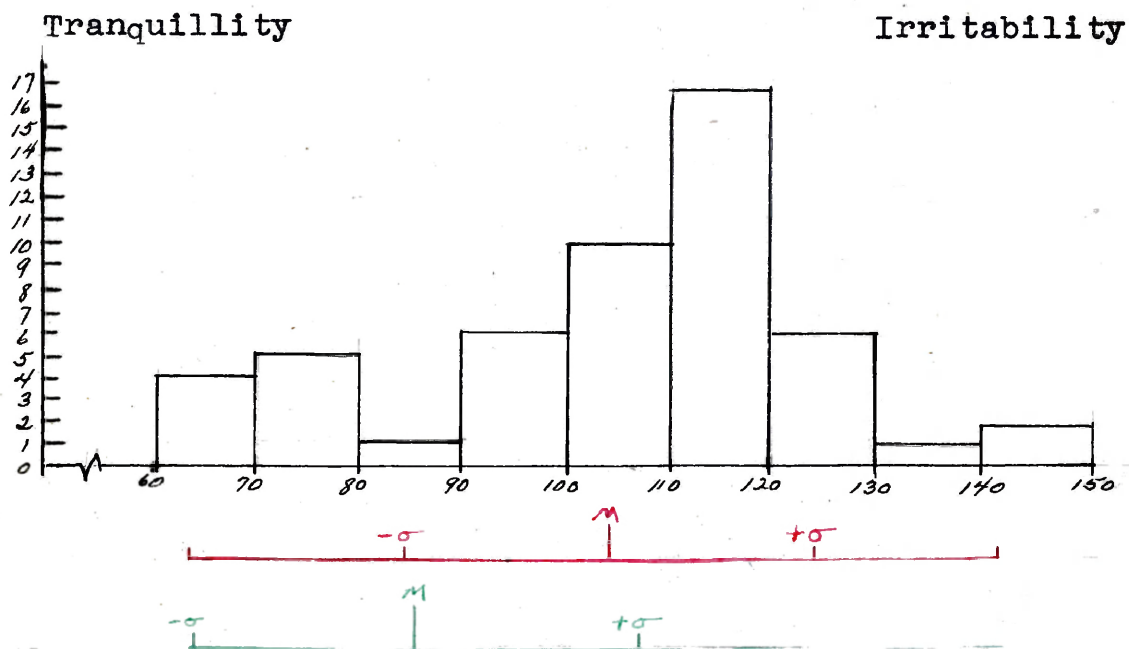


FIGURE 4  
PERSONAL AUDIT  
III

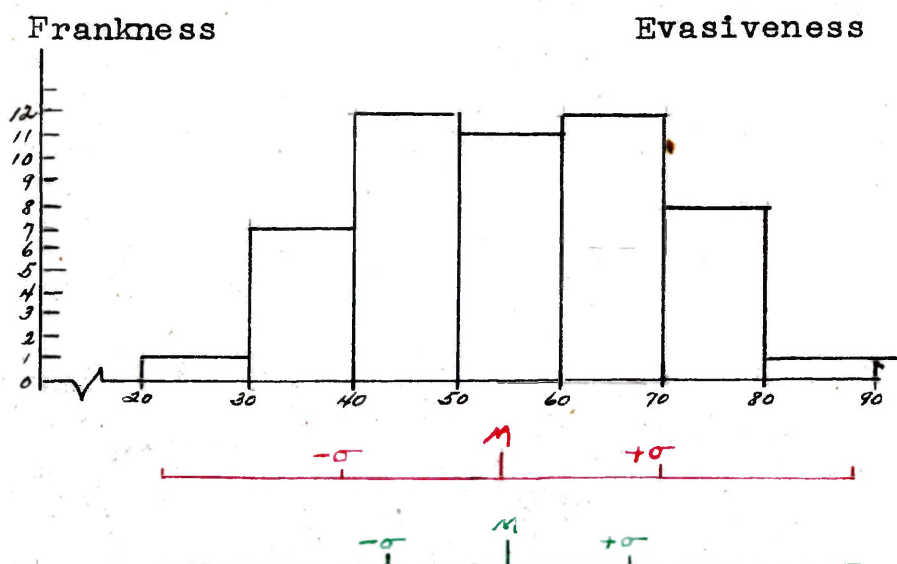


FIGURE 5  
PERSONAL AUDIT  
IV

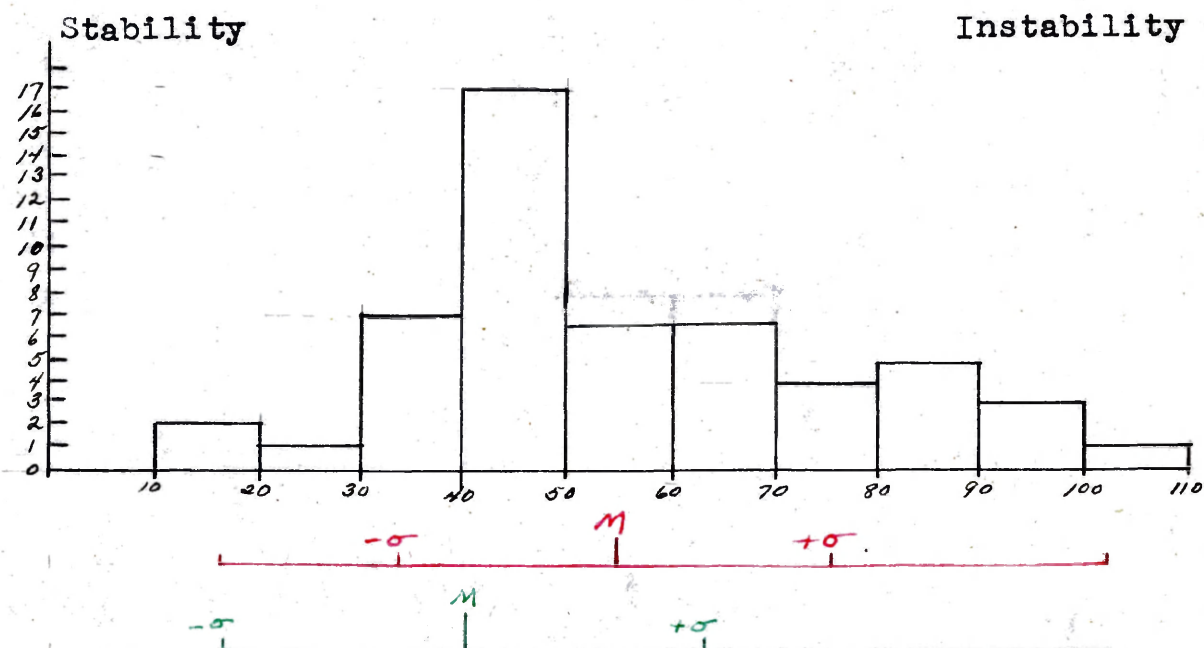


FIGURE 6  
PERSONAL AUDIT  
V



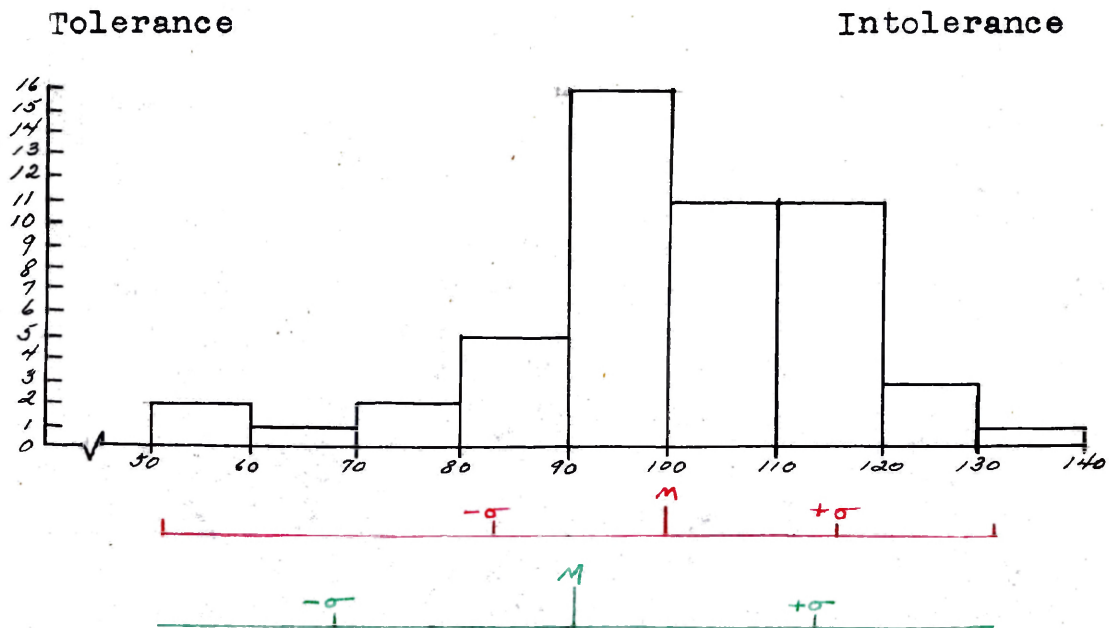


FIGURE 7  
PERSONAL AUDIT  
VI

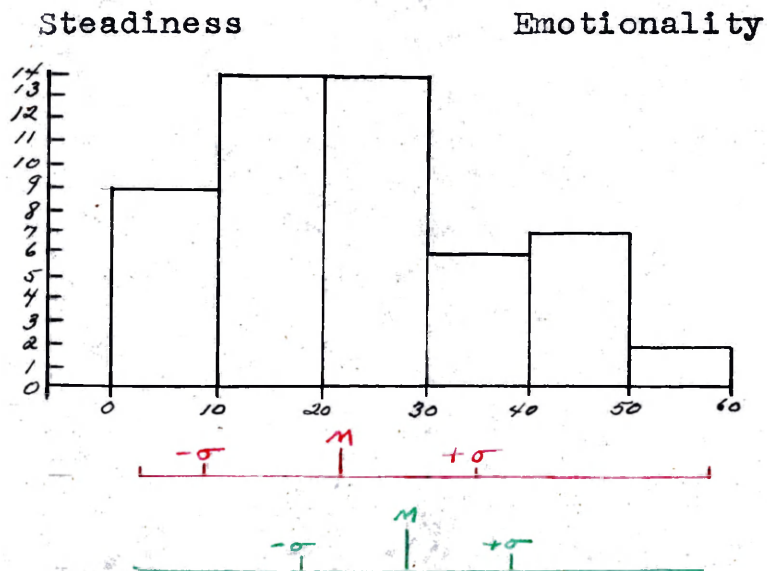


FIGURE 8  
PERSONAL AUDIT  
VII

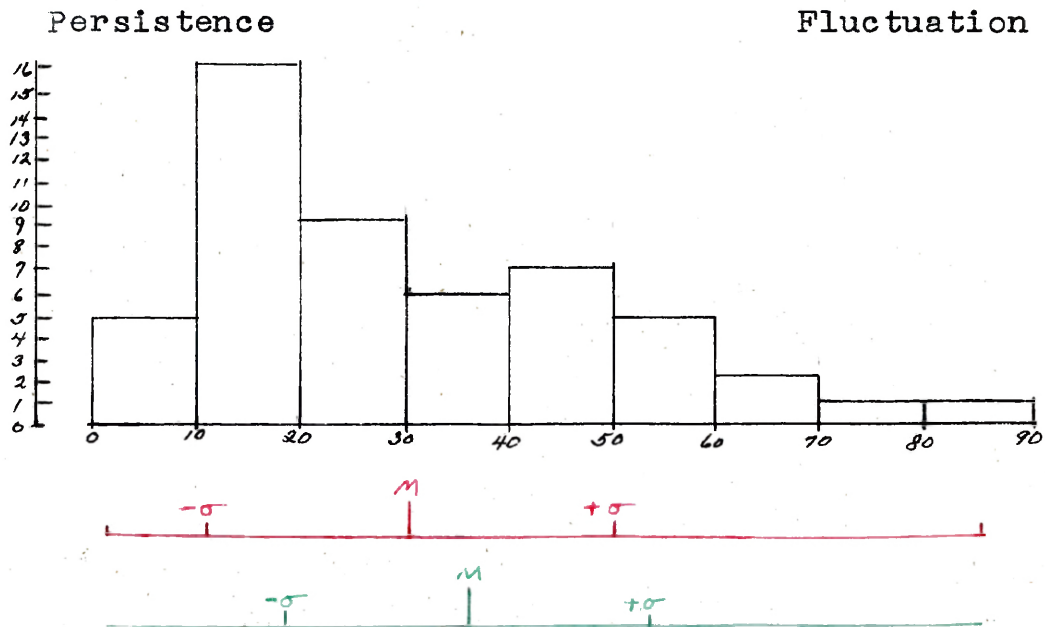


FIGURE 9  
PERSONAL AUDIT  
VIII

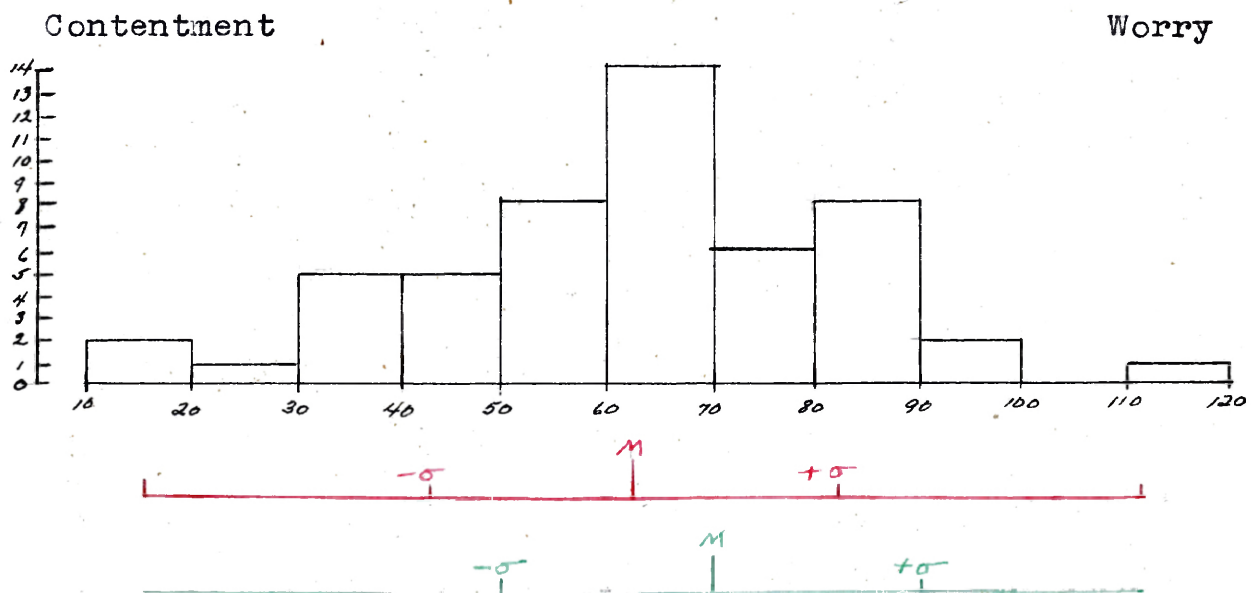


FIGURE 10  
PERSONAL AUDIT  
IX

the one percent level of confidence, the other was significant at the five percent level. The alcoholics deviated from the normal significantly in the following scales:

1. Serious-Impulsive in the direction of seriousness.
2. Tranquility-Irritability in the direction of irritability.
3. Stability-Instability in the direction of instability.
4. Tolerance-Intolerance in the direction of intolerance.
5. Steadiness-Emotionality in the direction of steadiness.
6. Contentment-Worry in the direction of contentment.

The distributions of the continuums for the Johnson Temperament Analysis followed very closely to normal distributions, with very little evidence of skewing (Figures 11-19).

Nine traits were measured by the Johnson Temperament Analysis. The alcoholic differed significantly from the norm population on eight traits, seven traits at the one percent level of confidence and one trait at the five percent level of confidence.

Traits found to be significant at the one percent level of confidence were:

- Nervousness in the direction of nervousness.
- Depressiveness in the direction of depressive.
- Cordial in the direction of cordial.
- Sympathetic in the direction of "hard-boiled".
- Subjective in the direction of subjective.

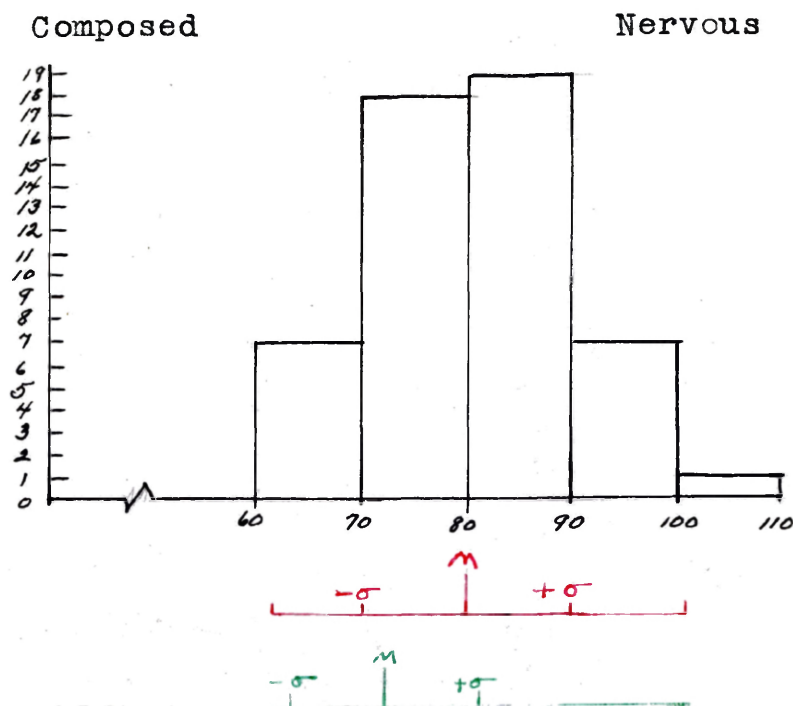


FIGURE 11  
JOHNSON TEMPERAMENT ANALYSIS  
A

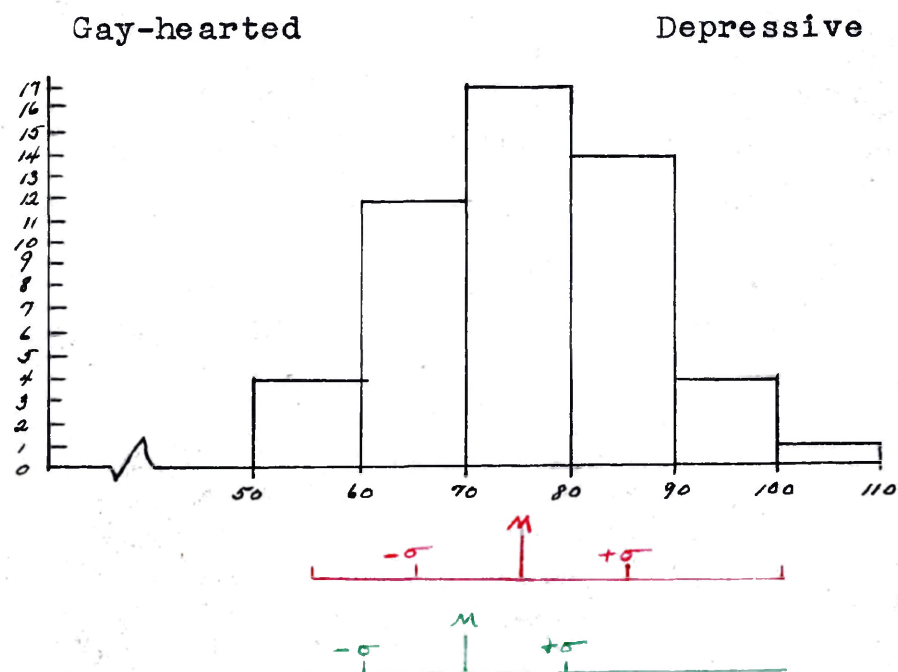


FIGURE 12  
JOHNSON TEMPERAMENT ANALYSIS  
B

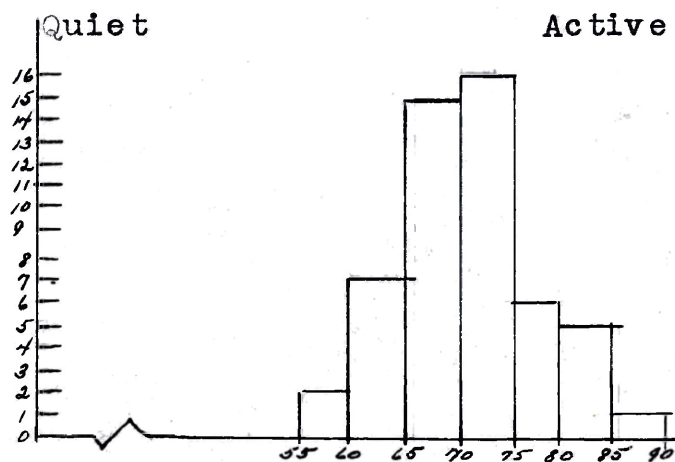


FIGURE 13  
JOHNSON TEMPERAMENT ANALYSIS  
C

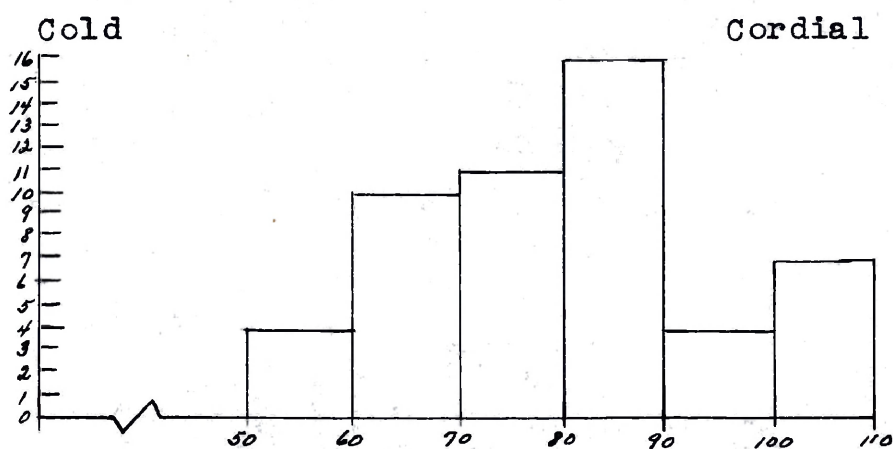


FIGURE 14  
JOHNSON TEMPERAMENT ANALYSIS

Hard-boiled

Sympathetic

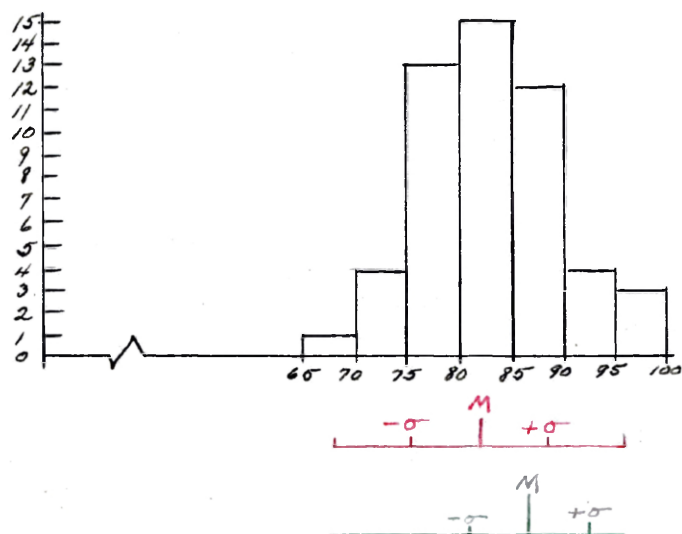


FIGURE 15  
JOHNSON TEMPERAMENT ANALYSIS  
E

Objective

Subjective

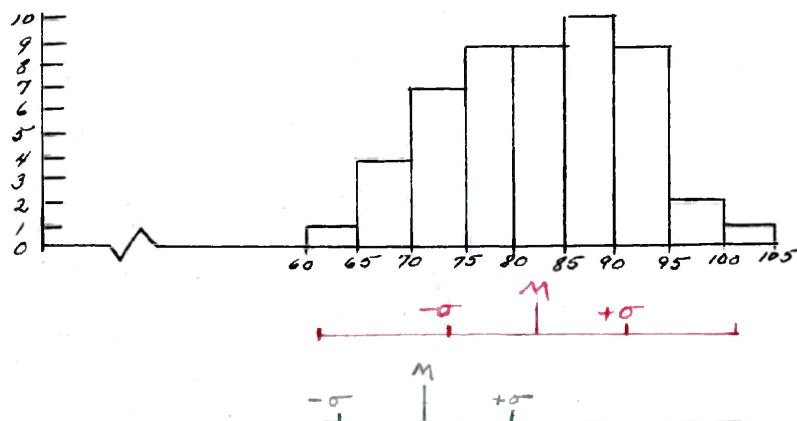


FIGURE 16  
JOHNSON TEMPERAMENT ANALYSIS  
F

Submissive

Aggressiveness

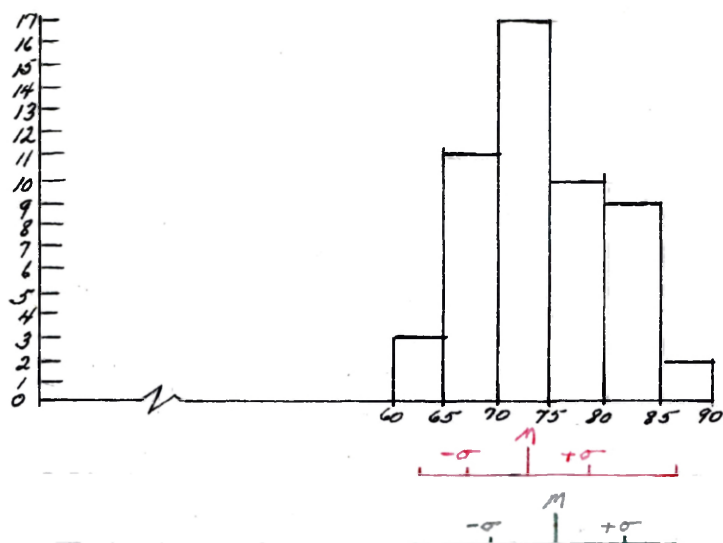


FIGURE 17  
JOHNSON TEMPERAMENT ANALYSIS  
G

Appreciative

Critical

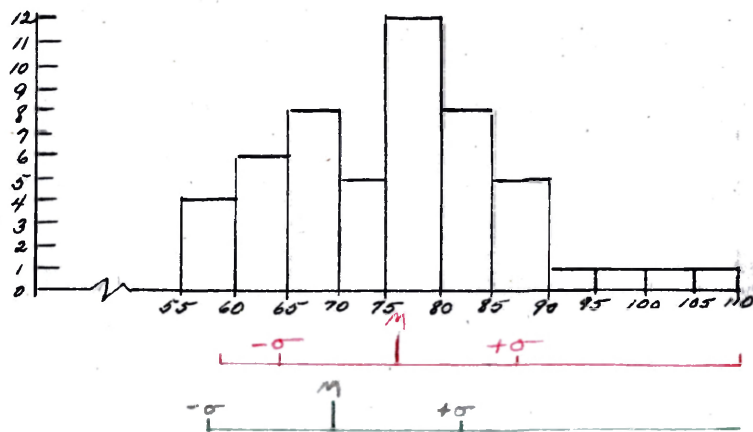


FIGURE 18  
JOHNSON TEMPERAMENT ANALYSIS  
H

Impulsive

Self-mastery

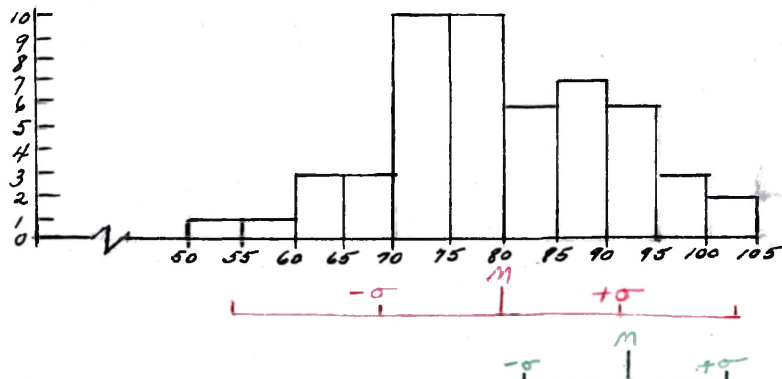


FIGURE 19  
JOHNSON TEMPERAMENT ANALYSIS  
I



Critical in the direction of critical.

Self-mastery in the direction of impulsive.

At the five percent level of confidence, active in the direction of quiet was found to be significant.

The distribution curves of the Personality Inventory, (Figures 20-25), tended to be normal with one decided exception, the measure of Neurotic Tendency (Fig. 20). The clustering of this scale was strongly in the opposite direction of the difference of the means.

Of the six measurements by the Personality Inventory, the null hypothesis was rejected for four of the scales. These were at the one percent level of confidence:

Neurotic tendency in the direction of neurotic tendency.

Self-sufficiency in the direction of lack of self-sufficiency.

Confidence in oneself in the direction of lack of confidence in oneself, at the five percent level of confidence.

Introversion-Extroversion in the direction of introversion.

The distribution curves for the Inventory of Factors STDCR, (Figures 26-30), held close to the normal with one exception, Social Extroversion-Introversion, (Fig. 26). The clustering in this distribution tended to be in the opposite direction of the difference of the means.

Three trait scales had  $t$  values of 5.00 or better, thus the null hypothesis could be rejected at a very high



Lack of Neurotic Tendency

Neurotic Tendency

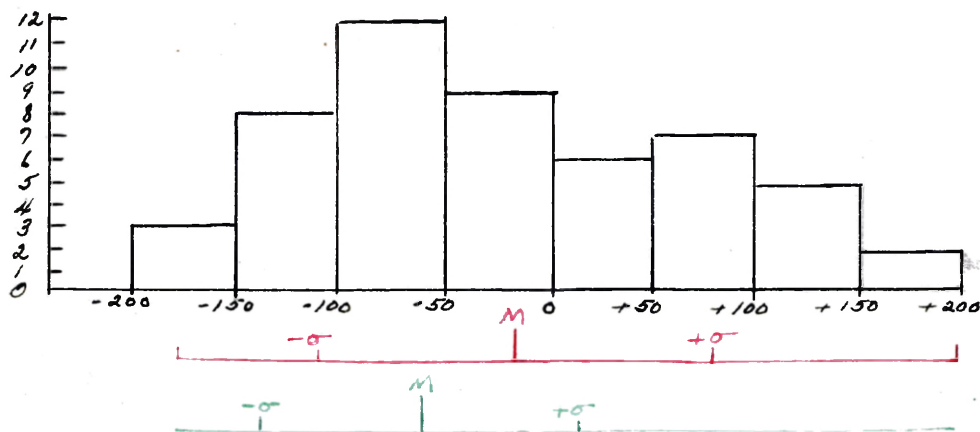


FIGURE 20  
PERSONALITY INVENTORY  
BN-1

Lack of self-sufficiency

Self-Sufficiency

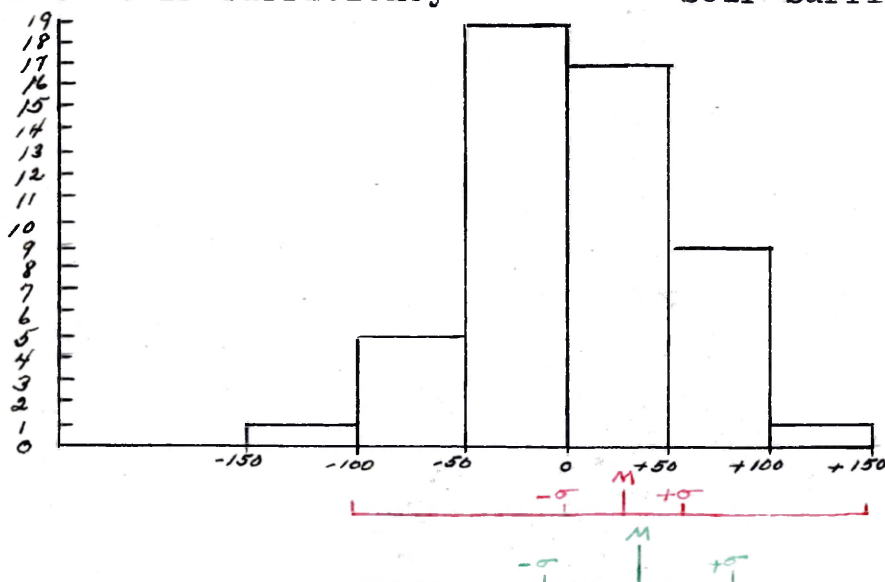


FIGURE 21  
PERSONALITY INVENTORY  
B2-S

Extroversion

Introversion

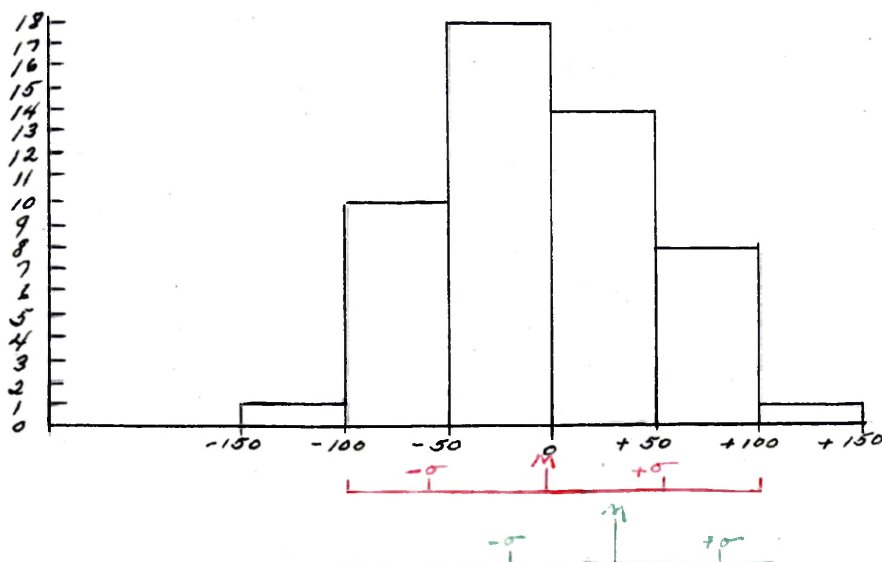


FIGURE 22  
PERSONALITY INVENTORY  
B3-T

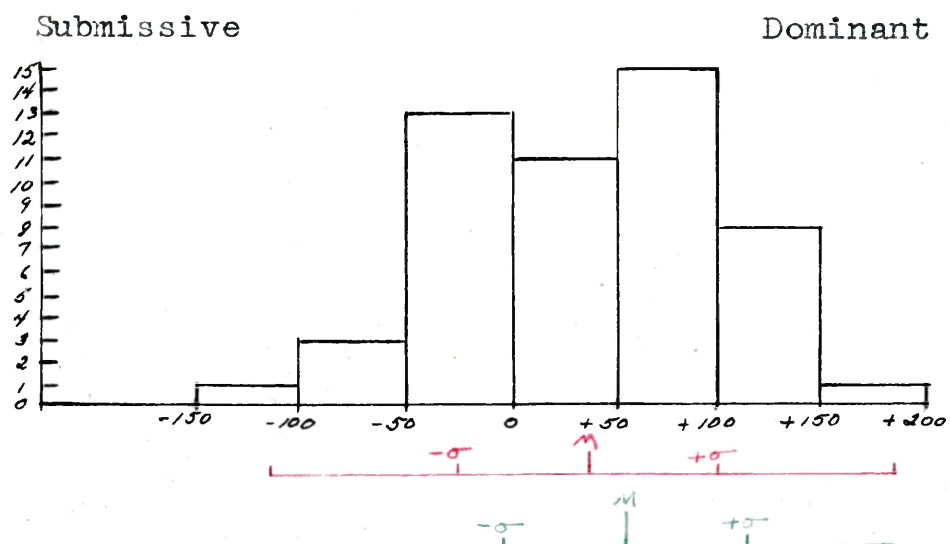


FIGURE 23  
PERSONALITY INVENTORY  
B4-D

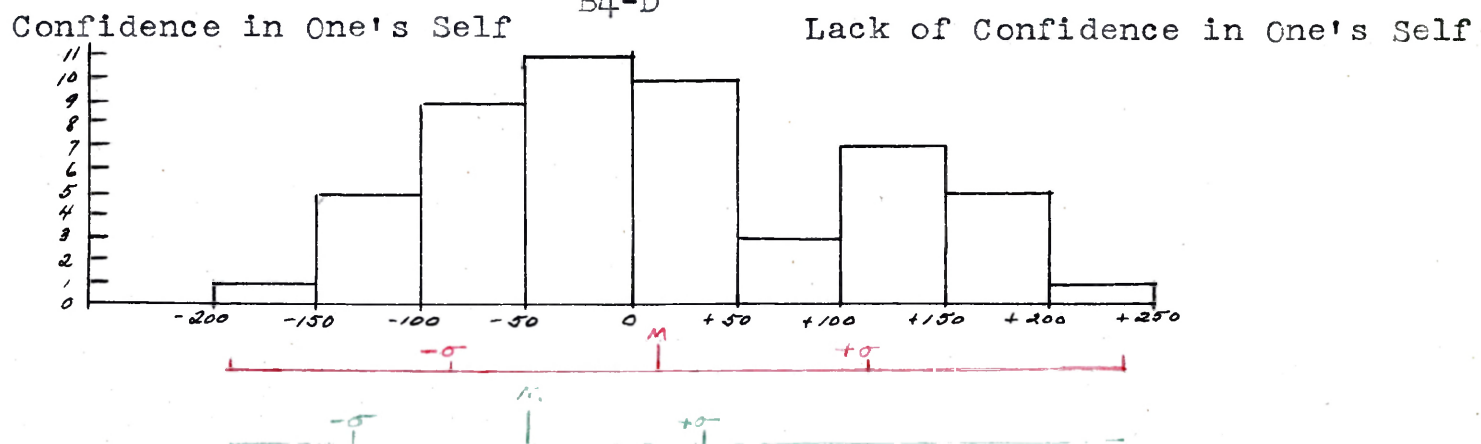


FIGURE 24  
PERSONALITY INVENTORY  
F1-C

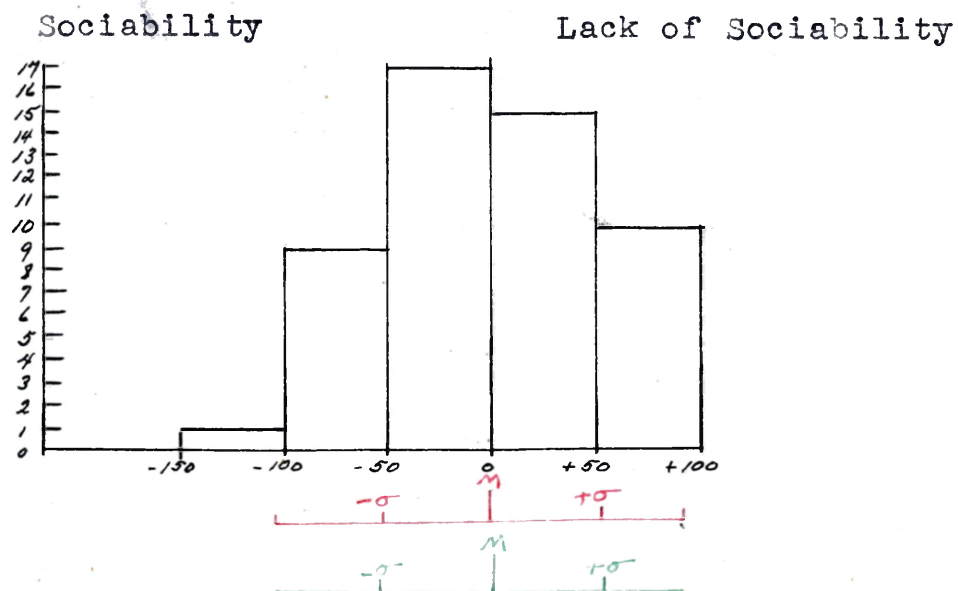


FIGURE 25  
PERSONALITY INVENTORY  
F2-S

Social Extroversion

Social Introversion

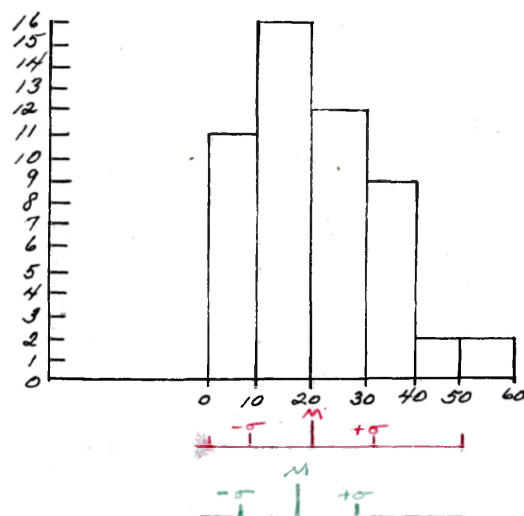


FIGURE 26

INVENTORY OF FACTORS STD CR

S

Thinking Extroversion

Thinking Introversion

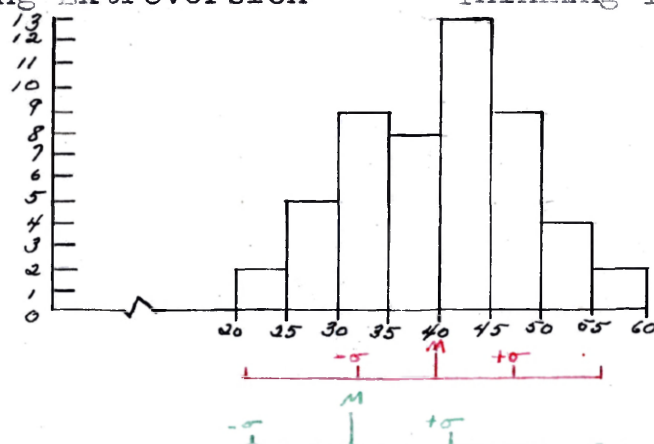


FIGURE 27

INVENTORY OF FACTORS STD CR

T

Lack of Depression

Depressive

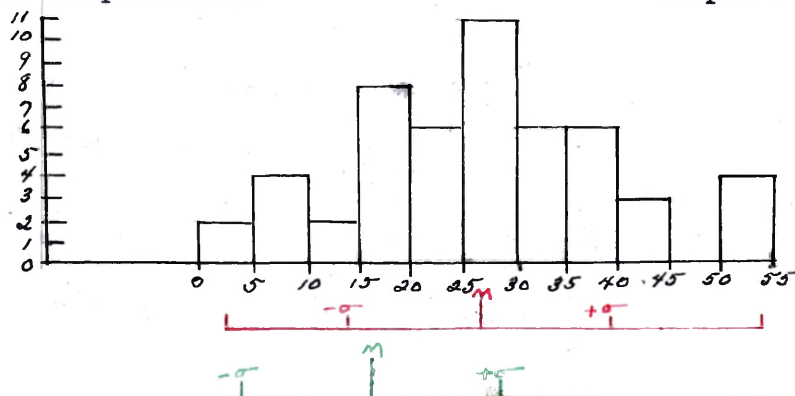


FIGURE 28

INVENTORY OF FACTORS STD CR

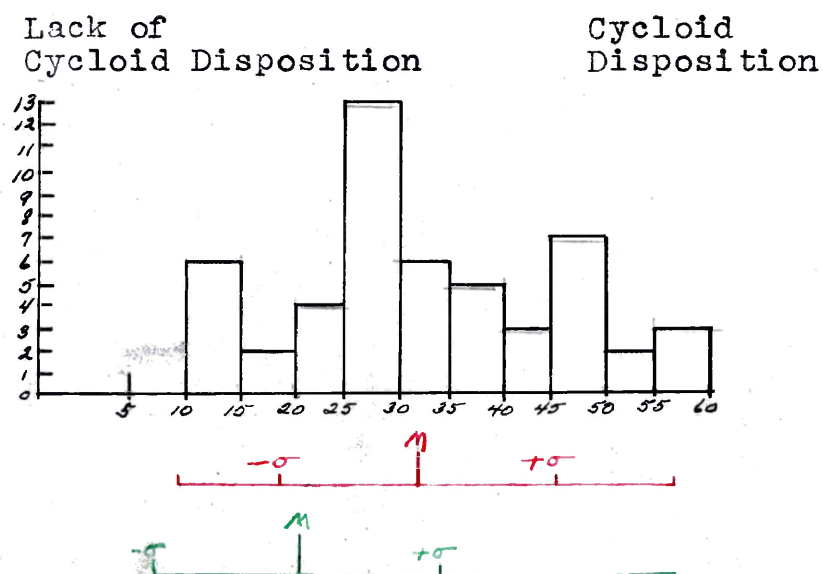


FIGURE 29  
INVENTORY OF FACTORS STDCR  
C

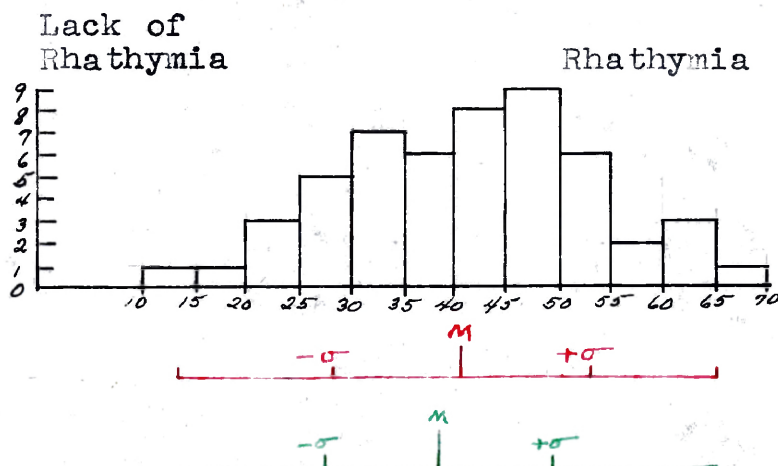


FIGURE 30  
INVENTORY OF FACTORS STDCR  
R

level of confidence. The scales which were found to have significant differences follow:

Thinking Extroversion-Introversion in the direction of thinking introversion.

Depressive in the direction of depressive.

Cycloid Disposition in the direction of cycloid disposition.

Table II presents the number of individuals who scored below the twenty-fifth or above the seventy-fifth percentile depending on the direction of the trait difference. The table shows the data for those traits which were significant at the one percent level of confidence.

It was thought that since such a high percentage of individuals scored beyond the middle, or normal, range, it would be possible to find a pattern or several patterns which would include a majority of the sample individuals. The data was examined, and there was no evidence that a common pattern, or group of patterns, existed when the twenty-fifth percentile or the seventy-fifth percentile levels were used as critical points. However, the tendency for the alcoholic to score beyond the normal range is considerable. In Table III there is found the number of times an individual scored beyond the middle range of the eighteen trait continuums which were significant at the one percent level. No person failed to score beyond the middle range. One person (A-50), did so only once, and he scored beyond the range on nine other non-significant traits.



TABLE II

FREQUENCY OF DEVIATIONS BEYOND THE 25th OR 75th PERCENTILE  
IN THE DIRECTION OF THE TRAIT DIFFERENCES  
FOR TRAITS SIGNIFICANT AT THE 1% LEVEL

<u>Test</u>	<u>Trait Name*</u>	<u>Number of Individuals</u>
<b>Personnel</b>		
	Intelligence	25 above the 75th percentile
<b>Personal Audit</b>		
	Seriousness	25 above the 75th percentile
	Irritability	35 below the 25th percentile
	Instability	20 below the 25th percentile
	Intolerance	17 below the 25th percentile
	Steadiness	18 above the 75th percentile
<b>Johnson Temperament Analysis</b>		
	Nervous	27 above the 75th percentile
	Depressive	22 above the 75th percentile
	Cold	22 below the 25th percentile
	"Hard-boiled"	25 below the 25th percentile
	Subjective	31 above the 75th percentile
	Critical	18 below the 25th percentile
	Impulsive	34 below the 25th percentile
<b>Personality Inventory</b>		
	Neurotic Tendency	24 above the 75th percentile
	Lack of Self-Sufficiency	24 below the 25th percentile
	Lack of Confidence in One's Self	27 above the 75th percentile
<b>Inventory of Factors STDCR</b>		
	Thinking Introversion	23 below the 25th percentile
	Depressive	25 below the 25th percentile
	Cycloid Tendency	23 below the 25th percentile

\*Trait name for the trait characterizing the alcoholic.

TABLE III

FREQUENCY OF THE NUMBER OF TIMES AN INDIVIDUAL SCORED  
BEYOND THE 25th OR 75th PERCENTILE IN THE  
DIRECTION OF THE TRAIT DIFFERENCE  
FOR TRAITS SIGNIFICANT AT THE 1% LEVEL

Identification Number	Personal Audit	Johnson Temperament Analysis	Personality Inventory	Inventory of Factors STDCR	Total	Identification Number	Personal Audit	Johnson Temperament Analysis	Personality Inventory	Inventory of Factors STDCR	Total
	5*	7*	3*	3*	18*						
1	2	3	0	3	10	57	2	4	2	1	9
2	2	3	1	1	7	59	3	0	2	3	8
3	2	0	0	0	2	60	1	3	3	2	9
5	3	6	1	3	13	92	4	6	2	3	15
7	1	3	2	0	8	102	2	7	3	2	12
8	3	3	3	2	13	103	1	0	3	0	4
11	1	3	1	4	10	A6	5	4	0	0	9
13	3	2	1	3	9	A15	4	1	3	3	11
14	4	7	3	3	17	A18	3	7	1	0	11
17	3	7	2	1	13	A35	3	4	3	3	13
21	4	0	0	0	4	A50	1	0	0	0	1
22	2	1	0	1	4	A76	2	5	1	0	8
24	3	6	2	3	14	A77	3	3	0	0	6
25	3	3	0	0	6	A78	3	3	1	0	7
30	3	5	3	3	14	A81	0	2	0	0	2
31	4	4	1	0	10	AVM	0	5	3	2	10
33	1	5	0	0	6	CEW	2	7	3	3	15
34	1	3	2	3	9	CMD	0	1	1	0	2
36	2	2	0	0	4	DD	2	2	0	0	4
38	1	3	3	0	7	EE	4	2	2	2	10
41	1	2	3	2	8	EWL	3	1	2	1	7
44	3	7	3	3	16	GLB	1	3	0	0	4
51	4	2	0	0	6	JD	1	5	0	2	8
53	2	2	2	3	9	JMM	1	1	1	0	3
55	2	7	2	3	14	NP	1	4	1	0	6
56	2	0	0	2	4	Z	1	6	2	2	11

\*Total number of traits in test which were significant at the  
1% level of confidence.



One person (No. 14) scored beyond the range on seventeen of the eighteen traits. Table III gives the breakdown by test with the total for the battery for each individual in the sample. Also, the mean and standard deviation are given. The traits which the individual scored beyond the normal range are found in the raw score tables in the Appendix underlined in black.

The raw scores for the means and the standard deviation limits were converted to percentile scores. These profiles are shown in Figure 31.

It was observed that the configuration formed by the means of the Johnson Temperament Analysis were frequently found in varying degrees within the individual profiles.\* When these were counted, twenty Johnson Temperament profiles adhered most closely to the average configuration. Nineteen profiles were closely parallel to The Personality Inventory percentile profile of the trait means. Eight profiles showed both the Johnson Temperament Analysis and The Personality Inventory configurations.

Profiles which closely resemble the profiles of the trait means are highly likely, particularly with the Johnson Temperament Analysis. Of the nine trait scales measured by this instrument, there was only one trait scale for which the null hypothesis could not be rejected at the five percent level of confidence. In the Personality Inventory, of the

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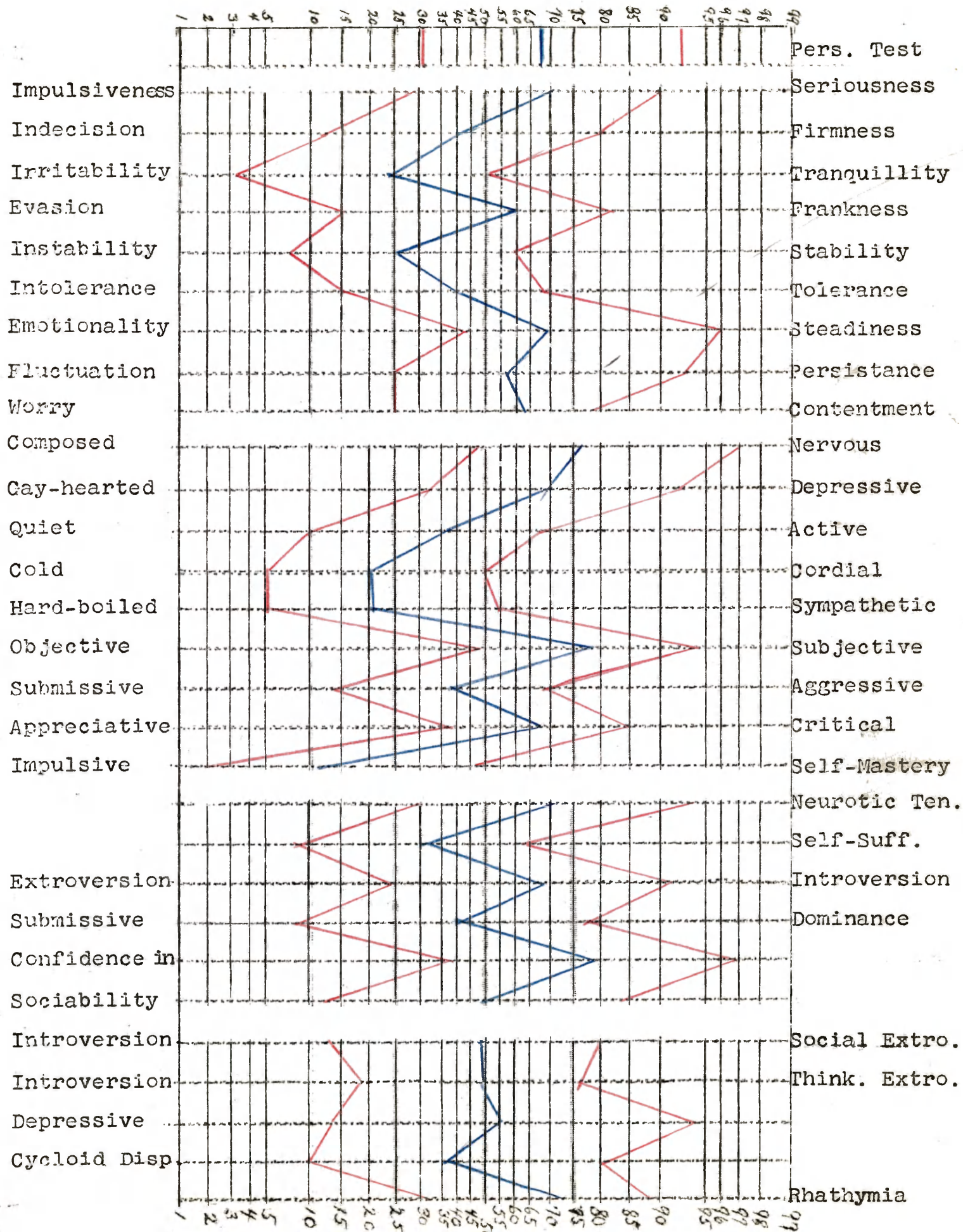
\* These profiles are indicated in the Appendix.



PERCENTILE PROFILES OF THE MEANS  
AND THE STANDARD DEVIATION LIMITS

48

— MEAN  
— STANDARD DEVIATION LIMITS



six traits measured, the null hypothesis was rejected for four of the traits at least at the five percent level of confidence.

No individual configuration similar to the profile of the trait means was found for the Personal Audit or The Inventory of Factors STDCR. This data will be analyzed.

## ANALYSIS OF DATA

The test battery obtained thirty measures of personality traits. That these are not thirty distinct and separate trait measurements is obvious in certain instances. In other instances, similarities are doubtlessly obscured by the construction of the instruments, and the non-existence of pure personality traits, operating in the individual independently of others. However, of the thirty measurements obtained, the sample differed significantly from the normal population on twenty-two of these measurements.

Caution must be exercised in use of this interpreted data. It must not be assumed that this was a random sample of alcoholics in general, nor a pure random sample of former alcoholics, now members of Alcoholics Anonymous. The selective factors involved with membership in Alcoholics Anonymous, and willingness to volunteer to take this test battery are not known. Further research is indicated. However, the evidence is strong enough to warrant its use with a large group of alcoholics and potential alcoholics until these selective factors are known.

It is again borne out that the alcoholic is a severely maladjusted individual who is at odds with the society in which he lives, if not with himself. Inspection of Table III, the raw score tables, and profiles indicates that there is a wide variation in which the alcoholic deviates from the

normal, and that there is not a common patterning of traits or syndrome peculiar to all obsessive users of alcohol. However, it has been indicated in conjunction with Figure 31 that there are possibly two general patterns which may be found associated with alcoholism. Further study could possibly reveal that these two profile configurations may be used in classifying alcoholic personality types. In this study it was impossible to compare the test results with clinical observation, as the subjects were anonymous even to the tester. It would be impossible to infer that similar trait profiles were the result of similar personality dynamics operating in the individual.

It is evident that members of Alcoholics Anonymous are inclined to be above average in intelligence as measured by the Personnel Test, and that many of its members are intellectually superior in their ability to think and understand in terms of numbers, symbols, and ideas. However, it will be shown, at least in a portion of their past, emotional and personality factors have warped their ability to think and understand objectively. The Personnel Test demonstrates that alcoholism is not restricted to those who lack the capacity to understand their relationship to social structure.

It is recognized that of the twenty personality and temperament measurements which show significant difference from the normal, there are measurements which are measuring approximately the same trait, and that there is probably considerable overlapping of other traits. The test authors

publish intercorrelation data for the traits in their tests, and where overlapping is likely to occur. These occurrences will be discussed for each test. However, it is beyond the scope of this study to determine the intercorrelations of traits between tests. Each significant trait will be interpreted separately. Also, the author's trait name is often confusing, so far as the interpretation of what the scale seemed to be measuring in the alcoholic. Rather than use the trait name, the author's trait symbol will be used to identify the trait.

### Personal Audit

- I. In general there appeared to be measured a tendency for the alcoholic to restrict his socializing to close friends, and being given to being a rather serious dispositioned individual.
- III. The measurement of this trait showed very strongly that he usually has little patience, and is likely to have difficulty controlling his temper, "flying off the handle" or becoming unduly impatient by minor irritations. He is hypersensitive to small annoyances.
- V. This scale strongly indicated that many compulsive drinkers lack confidence in themselves and are likely to prefer working in small groups rather than alone, and the lack of self-confidence is often accompanied by feelings of inferiority.

- VI. This trait measurement indicates that some alcoholics tend to be intolerant to the ideas, ideals, and standards of others. This may often be disguised as high standards. They hold strongly to their personal biases, with inability to understand or appreciate others' points of view.
- VII. For this trait, the author's interpretation is difficult to accept. "High scores percentiles or low raw scores indicate normal ways of thinking. Feelings are not intense." Rather, it is thought that for a large number of alcoholics it is a measure of lack of sensitivity to external stimuli, which does not involve them personally. (It will be noted on the Johnson Temperament they are lacking in expressive warm-heartedness and responsiveness to the feelings of others.)
- IX. There is a little tendency for some alcoholics to pass off personal problems with little concern about them. They tend to take them lightly, letting others do their worrying for them, as measured by this trait.

As evidenced by the Personal Audit, obsessive drinkers are as able to make and maintain decisions (I), are as likely to assume and accept responsibility (II), and are as likely to have stabilized interests and attitudes (VIII) as those found in the normal population. However, scores are not infrequently found at the extreme ends of the range.



According to the author's data on the trait inter-correlation, (extent that two traits tend to be covariant), there is no appreciable overlapping in the nine traits of the Personal Audit. By inspection, this seems to be true of the alcoholic sample.

#### Johnson Temperament Analysis

- A. This trait is a measurement of nervous tendencies, expressed overtly in fidgeting, tics, tremors, and apprehensiveness. It is strongly indicated that a large number of alcoholics tend to operate under nervous condition.
- B. Depressiveness, as measured by this scale, means being despondent, and sad disproportionate to the circumstances. Moodiness and gloominess is another way of expressing the disposition. It is very evident that a large portion of alcoholics suffer intense periods of moodiness and gloominess.
- D. As the measurement by this scale indicates, they are very likely to be cold and indifferent toward other persons. They lack expressive warm-heartedness toward the feelings and attitudes of others. They are likely to lack objective understanding of other persons' feelings and problems.
- E. There is a relatively strong indication, as evidenced by the measurement of this trait, that many alcoholics are unresponsive to the feelings

of others. They do not feel in sympathy the joys and sorrows of others, and tend to be "hard-boiled".

- F. It is very strongly indicated that the alcoholic is inclined to interpret things and events with his own ego as a frame of reference as indicated by this measurement, and is a self-centered individual who operates on bias, prejudice and intolerance.
- H. This is a measurement of criticalness. The indications are strong that many alcoholics are hypercritical of other persons or things, and it is highly likely that this is a means of achieving satisfying feelings of superiority.
- I. This is a measure of ability to make and carry out plans, ability to control impulses in the interest of planning. There is very strong evidence that a large majority of alcoholics are decidedly lacking in this ability, (anyone who has ever endeavored to make plans and work with a group of alcoholics has seen this trait borne out many times. It is an important factor to consider while working with them).

Only two traits, in data published by Johnson, appear to approach any degree of overlapping. These two traits are I and II, Nervous and Depressive. By inspection of raw score data, the alcoholic's scores appear to correlate in the same direction.



Personality Inventory

- B1-N This scale is interpreted as a measure of emotional stability, and the results indicate that a rather large number of alcoholics tend to suffer emotional upsets of varying degrees and frequencies.
- B2-S Ability to provide for one's own requirements and needs without the need for assistance of others, or self-sufficiency, is measured by this scale. It is strongly indicated that many of the compulsive drinkers are greatly in need of the reassurance, advice and encouragement of others, and are likely to find it difficult to operate alone.
- B3-I It was found that alcoholics are inclined to be given to day-dreaming and introspection, to living within themselves, and to imaginative thinking. The occurrence of this tendency is significantly greater than that occurring in the normal population.

Inspection of the trait intercorrelation table for the Personality Inventory reveals that three traits have high intercorrelations (B1-N, B3-I, and F1-C). These three traits, emotional instability, introversion, and lack of self-confidence have a strong tendency to be closely associated in the same person. This tendency was also found to be true of the alcoholics in this study.

It was also shown in the intercorrelation tables that traits B4-D (Dominance-Submissiveness) and F1-C (Self-confidence) were also highly correlated. However, it is doubtful

that these traits will show such a relationship in the alcoholics.

F1-C On this measure it was found that the alcoholic was very likely to be lacking in self-confidence and to be hampering self-conscious.

The Personality Inventory failed to show any significant differences from the normal population on the scale which measured a tendency towards playing submissive roles in face-to-face social situations (B4-D). Neither was there any significant difference in the measurement of sociability or gregariousness (F2-S). However, in individual cases, extreme deviations were not uncommon.

#### Inventory of Factors STDCR

- T. It is very strongly indicated that many compulsive drinkers are oriented toward introspective thinking, self-analytic of themselves and others, meditative thinking, and philosophizing. Their thinking and thoughts concern themselves and are directed inward rather than outward.
- D. Again it is strongly indicated that they are given to moodiness and gloominess which in many instances may be accompanied by feelings of guilt and unworthiness.
- C. This trait was a measurement of a cyclic fluctuation in mood and there is strong indication that this is common to a considerable number of alcoholics.

It is of interest to note that in this test, Extroversion-Introversion is categorized into three distinct types of Extroversion-Introversion, factors S, T, and R.

The alcoholic varied significantly from the normal population in factor T, but not factors S and R. Factor S, Social Extroversion-Introversion, measures the tendency to seek or withdraw from social contacts. Factor R, Rathymia, measured liveliness, happy-go-lucky, care-free, uninhibited disposition at one end of the continuum and control over the impulses and inhibited disposition at the opposite end.

An inspection of the intercorrelation table for the Inventory of Factors STDCE reveals only two traits with a high degree of correlation and that was between factors D and C, gloomy disposition and tendency for moods to fluctuate. The expected results were found in the alcoholics.

There is no clear-cut evidence that the alcoholics in general are narcissistic. Many of Murray's direct manifestations are lacking in trait measurements and must be interpreted from an individual's scores with reference to the individual. These traits are (1) Self-absorption, self-admiration, self-pity; (2) Autoerotism, superiority feelings and delusions of grandeur; (3) Self-display and extravagant demands for attention, praise, honor, aid, compassion or gratitude; (4) Susceptibility to neglect or belittlement, excessive shyness, and delusions of persecution.

Of the trait scales, Personal Audit III, hypersensitivity to small annoyances, comes within the closest alignment as a measurement of an element in Murray's fourth manifestation of narcissism, hypersensitiveness.

"(1) Ruthless self-seeking, demands for benefits, delusions of omnipotence; (2) object depreciation, difference, belittlement, exploitation, suspicion or hatred of others, misanthrope are indirect manifestations which are also lacking in close parallels of trait measurements."

"...attempts to dominate and demonstrate power" and indirect manifestation with two scales which, on the surface at least, appeared to measure this trait, failed to show a significant difference from the normal. These traits were Johnson Temperament Analysis (G) measuring feelings of aggressiveness-submissiveness and Personality Inventory (B4-D), measuring the tendency to play submissive or dominant roles in face-to-face relationships.

"(3) Egocentricity and projectivity; the perception and apperception of the world from an entirely personal or subjective standpoint", an indirect manifestation of narcissism, is the most clearly measured manifestation. This measurement was strongly found in the Johnson Temperament Analysis scale (F), measuring tendencies to think and feel in relation to self rather than with objectivity. Other scales tend to measure various other phases of projectivity. Personal Audit VI, indicated intolerance and the operation of strong biases,

accompanied by inability to see the viewpoint of others. The strong indications presented by the Johnson Temperament Analysis factor E, lack of expressive warm-heartedness, and factor F, unresponsiveness to the feelings of others, present further indications that the alcoholic, in a large number of instances, is unable to understand the behavior of others with objectivity. Guilford-Martin's Factor T indicates further evidence that he is overly preoccupied with thoughts and feelings with self-references.

In spite of the fact that the measurements in this battery do not show a clear-cut identification with narcissism as Murray defines it, there is sufficient evidence to state that many alcoholics have inclinations toward a Narcissistic personality, and that some aspects of this variable can be defined by existing personality instruments.

## SUMMARY

Increasing attention has been devoted to alcoholism. All who write concerning the problem attempt to isolate personality concomitants associated with compulsive users of alcohol. Many of these descriptions closely resemble Murray's definition of narcissism.

Others who have attempted to measure personality traits of compulsive users of alcohol have used instruments designed primarily to measure personality traits associated with clinically accepted syndromes.

With these ideas in mind, the following tests were selected for this study: The Personal Audit, The Johnson Temperament Analysis, The Personality Inventory, Inventory of Factors STDCR, and The Personnel Test. The last test is a measurement of mental ability.

These tests were administered to a group of fifty-two volunteer alcoholics who are members of the Omaha, Nebraska, Alcoholics Anonymous.

The trait means of the alcoholic sample and the trait means of the standardization population for each test were compared and tested for significant differences between two uncorrelated means.

The combined battery contained thirty personality trait measurements. These traits were not necessarily independent of each other. Of these thirty measurements, nineteen indicated that the alcoholic differed significantly from the norm population.

## CONCLUSIONS

1. No patterning of traits or syndromes was found that would be likely to include all of the alcoholics. However, two distinct patterns were found, one in the Johnson Temperament Analysis, and the other in The Personality Inventory.

2. Many alcoholics are superior in intelligence.

3. Published standardized personality instruments used in this battery differentiate alcoholic tendencies from normal populations. Of thirty trait measurements in The Personal Audit, Johnson Temperament Analysis, The Personality Inventory, and Inventory of Factors STDCR, alcoholics were found to differ significantly from test norms in nineteen measures of personality and temperament.

4. There was no clear-cut evidence that the measurements in this battery measure Murray's Narcism. However, there is sufficient evidence to indicate that for a number of alcoholics there is a tendency to be narcissistic in personality make-up.

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## APPENDIX A

### RAW SCORES

# RAW SCORES

Ident. Number	Age	Schooling	Wonderlic	PERSONAL AUDIT								
				I	II	III	IV	V	VI	VII	VIII	IX
1	40	12	<u>36</u>	105	50	<u>117</u>	70	78	108	35	50	91
2	45	11	19	<u>67</u>	33	<u>115</u>	49	30	96	30	69	66
3	52	13	<u>29</u>	113	28	<u>129</u>	48	44	<u>115</u>	32	2	15
5	40	12	<u>32</u>	96	45	<u>108</u>	61	<u>64</u>	<u>116</u>	59	18	59
7	69	9	<u>38</u>	<u>58</u>	28	63	44	47	52	21	25	53
8	43	16	<u>28</u>	<u>70</u>	14	<u>125</u>	31	<u>99</u>	84	20	19	68
11	41	14	<u>36</u>	94	38	78	61	37	94	<u>9</u>	24	83
13	40	18	<u>39</u>	<u>49</u>	19	<u>105</u>	37	43	96	<u>8</u>	84	67
14	57	12	24	<u>63</u>	51	<u>111</u>	67	<u>87</u>	81	<u>16</u>	51	61
17	39	10	22	82	63	<u>116</u>	34	<u>97</u>	<u>113</u>	44	59	67
21	41	12	<u>30</u>	<u>72</u>	37	<u>131</u>	51	49	<u>115</u>	<u>10</u>	13	68
22	42	12	<u>31</u>	83	37	<u>115</u>	41	41	<u>109</u>	21	21	34
24	36	16	<u>41</u>	<u>73</u>	26	<u>121</u>	63	<u>82</u>	95	50	40	84
25	40	14	22	94	33	<u>103</u>	42	<u>67</u>	95	<u>6</u>	16	78
30	40	12	21	<u>52</u>	34	<u>117</u>	73	<u>76</u>	85	26	56	66
31	35	13	<u>30</u>	100	48	<u>141</u>	68	<u>84</u>	<u>131</u>	<u>11</u>	46	84
33	38	14	25	<u>46</u>	30	78	56	42	107	19	30	37
34	36	12	26	88	38	65	51	49	72	<u>17</u>	22	57
36	44	18	<u>31</u>	<u>53</u>	23	<u>104</u>	35	41	88	35	38	49
38	36	14	<u>33</u>	86	26	<u>116</u>	52	46	100	26	40	60

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RAW SCORES  
Continued

Ident. Number	Age	Schooling	Wonderlic	PERSONAL AUDIT								
				I	II	III	IV	V	VI	VII	VIII	IX
41	33	8	15	<u>57</u>	16	90	35	34	93	42	58	41
44	41	10	9	108	51	<u>125</u>	67	<u>82</u>	<u>116</u>	40	35	80
51	42	8	<u>41</u>	<u>49</u>	26	<u>140</u>	40	<u>103</u>	94	<u>13</u>	19	72
53	50	14	<u>31</u>	86	41	<u>113</u>	76	38	<u>114</u>	40	20	59
55	43	12	<u>36</u>	<u>53</u>	40	<u>117</u>	73	47	100	23	10	48
56	54	12	20	79	65	<u>114</u>	77	49	<u>124</u>	18	40	91
57	39	13	20	<u>72</u>	39	<u>110</u>	88	57	104	27	12	88
59	42	10	25	81	27	<u>105</u>	56	<u>80</u>	98	<u>6</u>	46	77
60	46	8	9	<u>67</u>	45	66	53	53	91	41	32	43
92	38	12	<u>30</u>	104	54	<u>114</u>	71	<u>69</u>	<u>112</u>	<u>14</u>	19	50
102	43	11	26	<u>55</u>	40	91	52	55	<u>114</u>	25	19	59
103	42	8	25	80	42	77	49	20	68	<u>4</u>	45	30
A6	40	12	17	<u>23</u>	32	<u>115</u>	50	<u>90</u>	<u>126</u>	<u>6</u>	20	70
A15	45	10	20	<u>64</u>	42	<u>112</u>	56	<u>71</u>	101	<u>8</u>	10	47
A18	47	14	27	<u>60</u>	38	<u>104</u>	43	38	<u>114</u>	24	17	60
A35	47	7	19	<u>65</u>	30	<u>106</u>	61	40	97	<u>8</u>	40	52
A50	47	12	<u>32</u>	103	15	<u>112</u>	41	40	103	27	10	57
A76	46	9	22	<u>70</u>	51	63	69	<u>60</u>	74	19	5	16
A77	56	12	25	<u>71</u>	20	<u>120</u>	62	<u>63</u>	92	23	16	74
A78	21	11	15	79	46	<u>103</u>	54	48	<u>113</u>	<u>14</u>	24	111

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RAW SCORES  
Continued

Ident. Number	Age	Schooling	Wonderlic	PERSONAL AUDIT								
				I	II	III	IV	V	VI	VII	VIII	IX
A81	59	18	<u>34</u>	87	32	97	63	38	97	35	12	65
AVM	47	15	<u>37</u>	90	26	101	47	48	94	20	22	62
CEW	39	11	11	<u>73</u>	59	90	77	<u>52</u>	99	30	20	82
CMoD	41	12	18	88	26	71	39	19	90	23	0	65
DD	54	8	17	125	63	91	79	78	112	20	7	27
EE	31	14	<u>34</u>	121	40	<u>112</u>	52	<u>69</u>	<u>122</u>	<u>6</u>	38	87
EWL	54	12	<u>28</u>	<u>66</u>	51	<u>126</u>	48	17	<u>109</u>	18	9	35
GLB	34	12	<u>31</u>	96	35	98	45	33	94	<u>10</u>	30	85
JD	33	12	<u>28</u>	109	43	<u>109</u>	61	53	89	47	16	67
JMM	41	12	<u>32</u>	86	69	<u>110</u>	64	54	106	19	15	74
NP	40	16	24	76	22	89	35	45	104	<u>10</u>	63	37
Z	33	8	24	<u>75</u>	28	67	22	40	52	42	75	62

RAW SCORES  
JOHNSON TEMPERAMENT ANALYSIS

Ident. Number	A	B	C	D	E	F	G	H	I
1	64	72	83	<u>76</u>	<u>74</u>	<u>85</u>	81	<u>85</u>	<u>75</u>
2	75	63	64	<u>76</u>	84	<u>87</u>	64	73	<u>76</u>
3	62	55	84	107	87	61	80	58	102
5	<u>84</u>	<u>80</u>	71	<u>71</u>	<u>80</u>	<u>86</u>	73	75	<u>79</u>
7	<u>81</u>	77	66	<u>54</u>	88	<u>90</u>	82	<u>83</u>	<u>75</u>
8	<u>97</u>	73	72	107	<u>80</u>	<u>97</u>	74	<u>94</u>	<u>54</u>
11	67	<u>79</u>	64	<u>66</u>	<u>80</u>	<u>88</u>	68	78	<u>72</u>
13	73	<u>81</u>	78	<u>77</u>	95	70	75	64	87
14	<u>86</u>	<u>91</u>	72	<u>62</u>	<u>72</u>	<u>84</u>	80	<u>89</u>	<u>70</u>
17	<u>89</u>	<u>87</u>	78	<u>66</u>	<u>68</u>	<u>92</u>	71	<u>87</u>	<u>62</u>
21	66	62	73	81	87	72	76	66	93
22	74	69	72	85	<u>78</u>	67	74	65	95
24	<u>81</u>	<u>100</u>	63	<u>72</u>	96	<u>87</u>	74	<u>81</u>	<u>79</u>
25	79	<u>81</u>	71	82	83	<u>87</u>	70	78	<u>71</u>
30	78	<u>91</u>	66	89	<u>79</u>	<u>94</u>	79	<u>83</u>	<u>74</u>
31	85	63	85	104	83	<u>81</u>	81	<u>85</u>	<u>72</u>
33	77	76	67	<u>63</u>	<u>79</u>	<u>80</u>	70	<u>81</u>	<u>63</u>
34	<u>99</u>	<u>84</u>	57	82	91	<u>90</u>	70	69	97
36	<u>80</u>	56	65	92	<u>80</u>	77	72	63	101
38	<u>82</u>	73	73	<u>60</u>	83	<u>91</u>	74	78	85
41	74	<u>88</u>	60	<u>75</u>	90	72	72	60	86

Continued on following page

# RAW SCORES

## JOHNSON TEMPERAMENT ANALYSIS Continued

Ident. Number	A	B	C	D	E	F	G	H	I
44	<u>94</u>	<u>91</u>	66	<u>62</u>	<u>76</u>	<u>88</u>	77	<u>95</u>	<u>68</u>
51	73	<u>84</u>	63	89	<u>76</u>	69	69	62	90
53	79	72	79	86	<u>82</u>	72	87	64	<u>78</u>
55	<u>93</u>	<u>79</u>	67	<u>70</u>	<u>79</u>	<u>90</u>	74	76	<u>69</u>
56	70	60	84	104	83	73	82	58	89
57	70	77	61	<u>58</u>	<u>76</u>	<u>88</u>	70	72	<u>82</u>
59	73	66	81	104	86	65	80	66	85
60	<u>85</u>	64	68	87	<u>79</u>	79	67	70	<u>70</u>
92	<u>88</u>	91	74	85	<u>81</u>	<u>101</u>	87	<u>100</u>	<u>71</u>
102	<u>101</u>	<u>86</u>	65	<u>67</u>	<u>73</u>	<u>93</u>	81	<u>108</u>	<u>56</u>
103	61	59	67	97	90	71	65	58	92
A6	74	72	68	<u>80</u>	<u>75</u>	<u>80</u>	70	78	<u>80</u>
A15	74	<u>86</u>	66	81	84	76	75	78	90
A18	<u>84</u>	<u>81</u>	69	<u>63</u>	<u>74</u>	<u>84</u>	66	<u>80</u>	<u>70</u>
A35	<u>90</u>	<u>78</u>	64	<u>59</u>	<u>78</u>	75	68	69	93
A50	61	62	73	90	87	78	75	74	<u>82</u>
A76	<u>90</u>	<u>64</u>	72	64	<u>77</u>	<u>85</u>	64	78	<u>81</u>
A77	72	<u>84</u>	71	83	85	79	77	<u>79</u>	<u>83</u>
A78	<u>84</u>	76	76	88	84	<u>90</u>	77	75	<u>76</u>
A81	64	64	71	<u>74</u>	84	72	73	60	<u>77</u>
AVM	<u>89</u>	73	59	<u>71</u>	85	<u>87</u>	63	<u>83</u>	<u>62</u>

Continued on following page

RAW SCORES  
JOHNSON TEMPERAMENT ANALYSIS  
Continued

Ident. Number	A	B	C	D	E	F	G	H	I
CEW	<u>85</u>	<u>87</u>	69	<u>67</u>	<u>81</u>	<u>83</u>	74	<u>87</u>	<u>81</u>
CMcD	76	67	76	<u>73</u>	92	69	70	69	96
DD	<u>81</u>	59	66	91	87	<u>84</u>	77	70	87
EE	<u>80</u>	70	<u>83</u>	107	89	83	68	65	87
EWL	78	69	77	100	96	79	68	<u>84</u>	91
GLB	<u>87</u>	75	73	81	86	<u>90</u>	69	67	<u>67</u>
JD	<u>95</u>	72	72	84	<u>75</u>	<u>95</u>	80	<u>84</u>	<u>72</u>
JMM	79	77	71	89	86	76	67	58	<u>74</u>
NP	<u>88</u>	<u>82</u>	73	<u>71</u>	87	79	75	76	<u>77</u>
Z	<u>89</u>	<u>82</u>	66	<u>56</u>	<u>77</u>	<u>82</u>	68	77	<u>75</u>



RAW SCORES  
THE PERSONALITY INVENTORY

	B1-N	B2-S	B3-1	B4-D	F1-C	F2-S
1	-78	44	-29	84	-3	14
2	-56	<u>-25</u>	-47	43	-36	-67
3	-180	39	-94	130	-147	-46
5	<u>79</u>	4	41	-46	<u>108</u>	25
7	<u>65</u>	69	55	-10	<u>103</u>	82
8	<u>143</u>	<u>-102</u>	75	-48	<u>169</u>	-31
11	-14	49	18	63	24	60
13	-56	<u>-20</u>	-34	57	-20	-43
14	<u>77</u>	<u>-59</u>	43	-9	<u>98</u>	-18
17	-45	<u>-17</u>	-34	<u>-19</u>	19	-66
21	-114	23	-61	80	-78	-18
22	-29	87	-4	33	-20	81
24	<u>143</u>	33	68	-75	150	91
25	-132	47	-86	114	-117	-15
30	<u>174</u>	<u>-96</u>	100	-114	<u>230</u>	-9
31	-130	<u>-16</u>	-47	129	-85	-64
33	-13	10	-15	27	-2	25
34	<u>103</u>	-2	47	-34	<u>144</u>	19
36	-103	67	-43	101	-56	42
38	<u>5</u>	<u>-35</u>	-7	31	<u>33</u>	-17
41	40	-17	15	-60	111	-21
44	<u>136</u>	<u>-14</u>	91	-58	<u>192</u>	40

Continued on following page

RAW SCORES  
THE PERSONALITY INVENTORY  
Continued

	B1-N	B2-S	B3-I	B4-D	F1-C	F2-S
51	-98	88	-47	92	-80	35
53	<u>-2</u>	60	11	62	<u>-1</u>	74
55	<u>61</u>	16	49	-34	<u>113</u>	35
56	-124	13	-49	133	-86	-27
57	<u>3</u>	19	13	-28	<u>48</u>	9
59	<u>3</u>	3	14	35	27	2
60	<u>-6</u>	<u>-26</u>	-11	16	<u>17</u>	-46
92	<u>90</u>	8	86	-21	<u>136</u>	75
102	<u>-7</u>	<u>-58</u>	-5	22	<u>44</u>	-59
103	<u>-8</u>	<u>-82</u>	15	4	<u>15</u>	65
A6	-156	18	-100	76	-124	-41
A15	<u>75</u>	<u>-32</u>	50	-10	<u>129</u>	0
A18	-146	<u>-7</u>	-71	90	-85	-65
A35	<u>134</u>	<u>-19</u>	87	-49	<u>155</u>	71
A50	-114	64	-56	92	-100	19
A76	-64	<u>-12</u>	-50	48	-51	-18
A77	-59	65	6	91	-49	52
A78	-72	<u>-48</u>	-26	80	-24	-74
A81	-161	74	-76	115	-128	7
AVM	<u>-3</u>	<u>-61</u>	7	12	61	-58
CEW	<u>83</u>	<u>-31</u>	52	-32	164	-16

Continued on following page

RAW SCORES  
THE PERSONALITY INVENTORY  
Continued

	B1-N	B2-S	B3-I	B4-D	F1-C	F2-S
GMCD	<u>193</u>	143	-90	179	-196	84
DD	-95	74	30	106	-79	29
EE	-62	<u>-23</u>	-25	66	<u>3</u>	51
EWL	-43	<u>-4</u>	-5	64	<u>11</u>	-27
GLB	-98	16	-51	53	-30	-43
JD	-103	20	-45	111	-55	-16
JMM	-98	<u>-4</u>	-70	41	-43	-77
NP	-94	<u>-11</u>	-37	51	-18	-104
Z	<u>41</u>	22	14	-15	<u>61</u>	26

RAW SCORES  
AN INVENTORY OF FACTORS STDOR

	S	T	D	O	R
1	15	<u>56</u>	<u>30</u>	<u>42</u>	40
2	10	<u>44</u>	20	25	45
3	6	30	2	11	51
5	34	<u>42</u>	<u>51</u>	<u>50</u>	32
7	37	36	24	29	42
8	24	30	<u>39</u>	<u>55</u>	63
11	22	<u>42</u>	<u>32</u>	<u>38</u>	43
13	22	<u>50</u>	<u>29</u>	24	20
14	7	<u>48</u>	<u>35</u>	<u>45</u>	56
17	32	31	<u>28</u>	28	35
21	21	40	8	16	35
22	20	<u>52</u>	27	30	28
24	45	<u>56</u>	<u>50</u>	<u>46</u>	13
25	7	25	11	10	44
30	52	<u>48</u>	<u>53</u>	<u>55</u>	21
31	1	36	14	27	65
33	22	24	15	13	30
34	39	<u>48</u>	<u>39</u>	<u>45</u>	31
36	19	38	20	25	37
38	15	33	21	27	47
41	50	46	31	31	19
44	39	<u>46</u>	<u>50</u>	<u>56</u>	32

Continued on following page

# RAW SCORES

## AN INVENTORY OF FACTORS STDOR Continued

	S	T	D	C	R
51	16	29	23	30	54
53	15	<u>45</u>	<u>29</u>	<u>43</u>	47
55	30	<u>47</u>	<u>40</u>	<u>49</u>	50
56	6	<u>44</u>	25	<u>37</u>	62
57	28	<u>44</u>	26	28	23
59	16	<u>45</u>	<u>28</u>	<u>39</u>	49
60	31	<u>29</u>	<u>29</u>	<u>33</u>	33
92	28	<u>51</u>	<u>44</u>	<u>54</u>	39
102	19	<u>44</u>	<u>35</u>	<u>48</u>	50
103	25	35	17	20	31
A6	19	21	8	9	42
A15	29	<u>43</u>	<u>38</u>	<u>40</u>	41
A18	15	27	5	11	39
A35	41	<u>43</u>	<u>40</u>	<u>47</u>	25
A50	9	40	15	24	47
A76	16	29	15	28	58
A77	18	40	16	19	38
A78	9	38	25	28	46
A81	9	31	4	10	49
AVM	28	33	<u>28</u>	<u>34</u>	46
CEW	34	<u>47</u>	<u>39</u>	<u>46</u>	33

Continued on following page

# RAW SCORES

## AN INVENTORY OF FACTORS STDOR Continued

	S	T	D	C	R
CMCD	7	39	8	14	46
DD	6	40	15	29	62
EE	6	39	<u>31</u>	<u>35</u>	41
EWL	22	40	<u>31</u>	27	27
GLB	19	32	19	27	51
JD	16	<u>50</u>	27	<u>38</u>	50
JMM	17	31	24	25	41
NP	10	37	15	20	29
Z	31	33	<u>30</u>	<u>34</u>	25

## APPENDIX B

### DATA USED IN TESTING SIGNIFICANT DIFFERENCES



# DATA USED IN TESTING SIGNIFICANT DIFFERENCES

## SAMPLE DATA

Number of Cases - Fifty-two

### PERSONNEL TEST

### PERSONAL AUDIT

		I	II	III
$\Sigma X$	1,375.	4,062.	1,955.	5,416.
$M$	26.44	78.12	37.60	104.2
$\Sigma X^2$	39,553.	339,434.	82,463.	583,742.
$(\Sigma X)^2/N$	36,358.17	317,304.69	73,500.48	564,097.23
$\Sigma X^2$	3,194.83	22,129.31	8,962.52	19,644.77
$\sigma^2$	62.64	433.91	175.74	385.19
$\sigma$	7.91	20.8	13.3	19.6
$\sigma_m^2$	1.23	8.51	3.45	7.55

### NORM DATA

$N$	36,864.	160.	160.	160.
$M$	23.37	86.8	35.7	86.2
$\sigma^2$	69.22	404.01	139.24	432.64
$\sigma$	8.32	20.1	11.8	20.8
$\sigma_m^2$	.0019	2.54	.88	2.72

### COMPARATIVE DATA

$D$	3.07	8.7	1.9	18.0
$\sigma_m D$	1.1	3.3	2.1	3.2
$t$	2.77	2.62	.91	5.63
$P$	< .01	> .01	> .05	< .01

DATA USED IN TESTING SIGNIFICANT DIFFERENCES  
Continued

SAMPLE DATA

Number of Cases - Fifty-two

PERSONAL AUDIT

	IV	V	VI	VII
$\Sigma X$	2,839.	2,893.	5,168.	1,197.
$M$	54.60	55.63	99.38	23.02
$\Sigma X^2$	165,611.	183,319.	527,568.	36,405.
$(\Sigma X)^2/N$	154,998.48	160,950.94	513,619.69	27,554.02
$\Sigma x^2$	10,612.52	22,368.06	13,948.31	8,850.98
$\sigma^2$	208.09	438.59	273.50	173.55
$\sigma$	14.4	20.9	16.54	13.17
$\sigma_m^2$	4.08	8.60	5.36	3.40

NORM DATA

$N$	160.	160.	160.	160.
$M$	55.0	41.5	91.3	29.4
$\sigma^2$	158.76	519.84	475.24	108.16
$\sigma$	12.6	22.8	21.8	10.4
$\sigma_m^2$	1.0	3.3	3.0	.7

COMPARATIVE DATA

$D$	.4	14.1	8.1	6.4
$\sigma_{m0}$	2.3	3.5	2.9	2.0
$t$	.18	4.09	2.79	3.17
$P$	> .05	< .01	< .01	< .01

DATA USED IN TESTING SIGNIFICANT DIFFERENCES  
Continued

SAMPLE DATA

Number of Cases - Fifty-two

	PERSONAL AUDIT		JOHNSON TEMPERAMENT ANALYSIS	
	VIII	IX	A	B
$\Sigma X$	1,527.	3,220.	4,160.	3,910.
$M$	29.4	61.9	80.0	75.19
$\Sigma X^2$	64,439.	219,708.	337,806.	299,654.
$(\Sigma X)^2/N$	44,840.94	199,329.31	332,800.00	294,001.92
$\Sigma x^2$	19,598.06	20,315.69	5,006.0	5,652.08
$s^2$	384.28	398.35	98.16	110.8
$s$	19.6	20.0	9.9	10.5
$\sigma_m^2$	7.53	7.81	1.92	2.2

NORM DATA

$N$	160.	160.	100.	100.
$M$	34.6	69.1	71.17	69.72
$s^2$	299.29	396.01	80.41	103.70
$s$	17.3	19.9	9.0	10.2
$\sigma_m^2$	1.88	2.49	.81	1.04

COMPARATIVE DATA

$D$	5.2	7.2	8.83	5.47
$\sigma_{mo}$	3.07	3.21	1.7	1.8
$t$	1.69	2.25	5.35	3.06
$P$	> .05	< .05	< .01	< .01

DATA USED IN TESTING SIGNIFICANT DIFFERENCES  
Continued

SAMPLE DATA

Number of Cases - Fifty-two

JOHNSON TEMPERAMENT ANALYSIS

	C	D	E	F
$\Sigma X$	3,674.	4,128.	4,287.	4,253.
$M$	70.65	79.38	82.44	81.79
$\Sigma X^2$	261,912.	338,474.	355,433.	351,867.
$(\Sigma X)^2/N$	259,582.23	327,699.69	353,430.17	347,846.33
$\Sigma x^2$	2,329.77	10,774.31	2,002.83	4,020.67
$\sigma^2$	45.68	211.26	39.27	78.84
$\sigma$	6.8	14.53	6.27	8.88
$\sigma_m^2$	.90	4.14	.77	1.55

NORM DATA

$N$	100.	100.	100.	100.
$M$	73.33	89.59	86.16	71.99
$\sigma^2$	50.78	173.15	28.64	71.53
$\sigma$	7.1	13.16	5.35	8.46
$\sigma_m^2$	.51	1.75	.29	.72

COMPARATIVE DATA

$D$	2.68	10.21	3.72	9.8
$\sigma_{m0}$	1.2	2.43	1.03	1.51
$t$	2.25	4.20	3.61	6.49
$P$	< .05	< .01	< .01	< .01

DATA USED IN TESTING SIGNIFICANT DIFFERENCES  
Continued

SAMPLE DATA

Number of Cases - Fifty-two

JOHNSON TEMPERAMENT ANALYSIS

	G	H	I
$\Sigma X$	3,823.	3,915.	4,119.
$M$	73.52	75.29	79.21
$\Sigma X^2$	282,787.	301,195.	332,551.
$(\Sigma X)^2/N$	281,064.02	294,754.33	326,272.33
$\Sigma X^2$	1,722.98	6,440.67	6,278.67
$\sigma^2$	33.78	126.29	123.11
$\sigma$	5.81	11.24	11.10
$\sigma_m^2$	.66	2.48	2.41

NORM DATA

$N$	100.	100.	100.
$M$	75.49	70.05	90.85
$\sigma^2$	36.89	138.96	87.40
$\sigma$	6.07	11.79	9.35
$\sigma_m^2$	.37	1.40	.88

COMPARATIVE DATA

$D$	1.97	5.24	11.64
$\sigma_{m0}$	1.02	1.97	1.82
$t$	1.93	2.66	6.40
$p$	> .05	.01	< .01

DATA USED IN TESTING SIGNIFICANT DIFFERENCES  
Continued

SAMPLE DATA

Number of Cases - Fifty-two

THE PERSONALITY INVENTORY

	B1-N	B2-S	B3-I
$\Sigma X$	-915.	354.	-328.
$M$	-17.6	6.8	-6.31
$\Sigma X^2$	481,297.	126,404.	143,498.
$(\Sigma X)^2/N$	16,100.48	2,409.92	2,068.92
$\Sigma x^2$	465,196.52	123,994.08	141,429.08
$\sigma^2$	9,121.50	2,431.26	2,773.12
$\sigma$	95.51	49.31	52.7
$\sigma_m^2$	178.85	47.67	54.4

NORM DATA

$N$	300.	310.	99.
$M$	-63.9	32.3	-28.4
$\sigma^2$	6,241.00	2,500.00	2,540.16
$\sigma$	79.0	50.0	50.4
$\sigma_m^2$	20.87	8.09	25.92

COMPARATIVE DATA

$D$	46.3	25.5	22.1
$\sigma_{MD}$	14.1	7.47	9.0
$t$	3.28	3.41	2.46
$P$	< .01	< .01	< .05

DATA USED IN TESTING SIGNIFICANT DIFFERENCES  
Continued

SAMPLE DATA

Number of Cases - Fifty-two

THE PERSONALITY INVENTORY

	B4-D	F1-C	F2-S
$\Sigma X$	1,869.	652.	-75.
$M$	35.9	12.5	-1.44
$\Sigma X^2$	275,687.	492,634.	128,309.
$(\Sigma X)^2/N$	67,176.	8,175.08	108.17
$\Sigma x^2$	208,510.83	484,458.92	128,200.83
$\sigma^2$	4,088.45	9,499.19	2,513.74
$\sigma$	63.9	97.5	50.14
$\sigma_m^2$	80.17	186.26	49.29

NORM DATA

$N$	311.	914.	914.
$M$	53.9	-53.4	0.2
$\sigma^2$	3,364.	6,625.96	3,091.36
$\sigma$	58.0	81.4	55.6
$\sigma_m^2$	10.85	7.26	3.39

COMPARATIVE DATA

$D$	18.0	65.9	1.64
$\sigma_{Mo}$	9.54	13.9	7.3
$t$	1.89	4.74	.22
$P$	> .05	< .01	> .05

DATA USED IN TESTING SIGNIFICANT DIFFERENCES  
Continued

SAMPLE DATA

Number of Cases - Fifty-two

INVENTORY OF FACTORS STDGR

	S	T	D	C	R
$\Sigma X$	1,114.	2,047.	1,358.	1,654.	2,103.
$M$	21.42	39.37	26.12	31.81	40.44
$\Sigma X^2$	31,366.	84,143.	43,476.	61,242.	92,615.
$(\Sigma X)^2/N$	23,865.31	80,580.94	35,464.69	52,609.92	85,050.17
$\Sigma X^2$	7,500.69	3,562.06	8,011.08	8,632.08	7,564.83
$\sigma^2$	147.07	69.84	157.08	196.26	148.33
$\sigma$	12.13	8.36	12.53	13.01	12.18
$\sigma_m^2$	2.88	1.37	3.08	3.32	2.91

NORM DATA

$N$	90.	90.	90.	90.	90.
$M$	18.4	31.56	16.11	19.61	38.06
$\sigma^2$	107.54	93.70	149.82	180.10	118.81
$\sigma$	10.37	9.68	12.24	13.42	10.90
$\sigma_m^2$	1.21	1.05	1.68	2.02	1.33

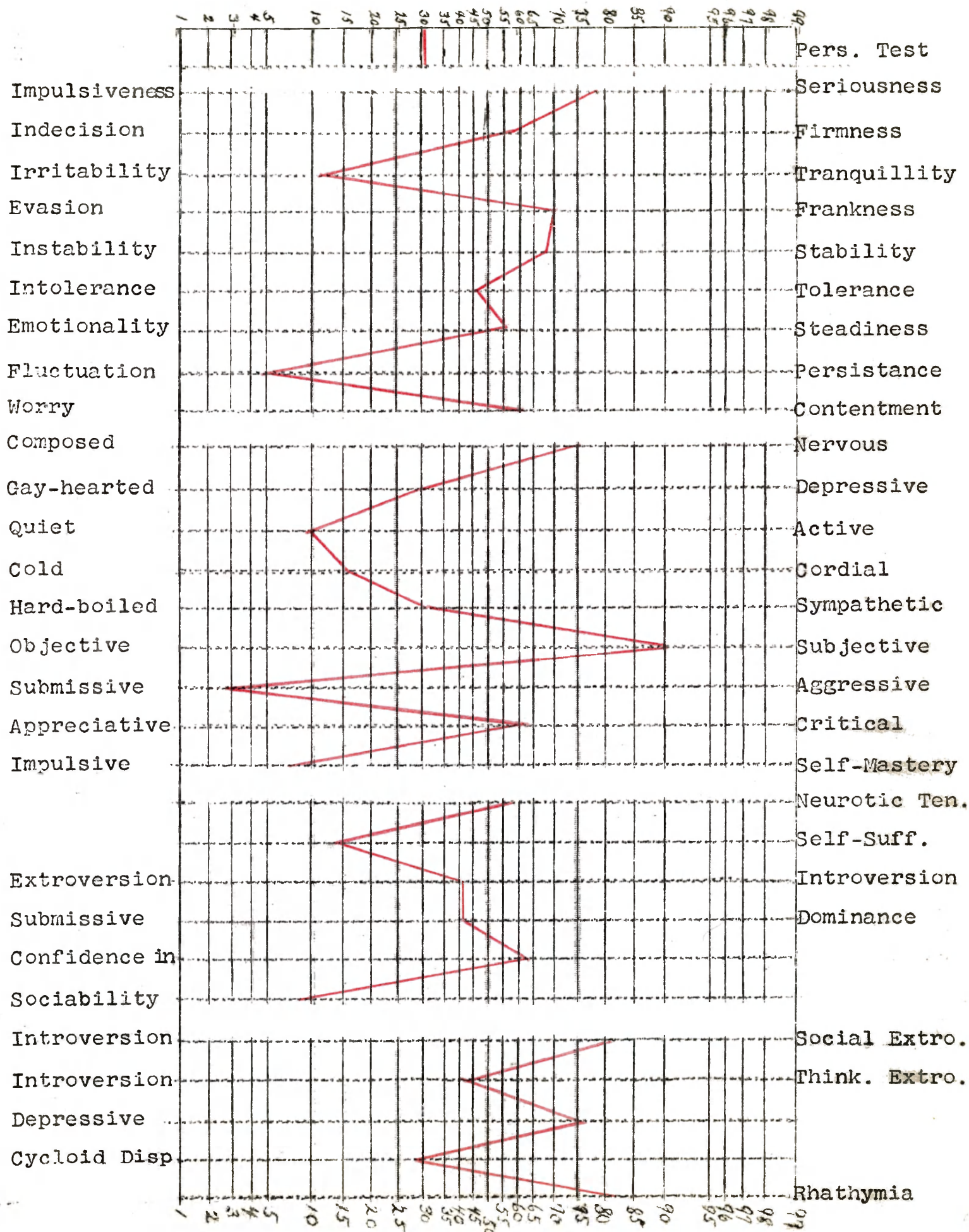
COMPARATIVE DATA

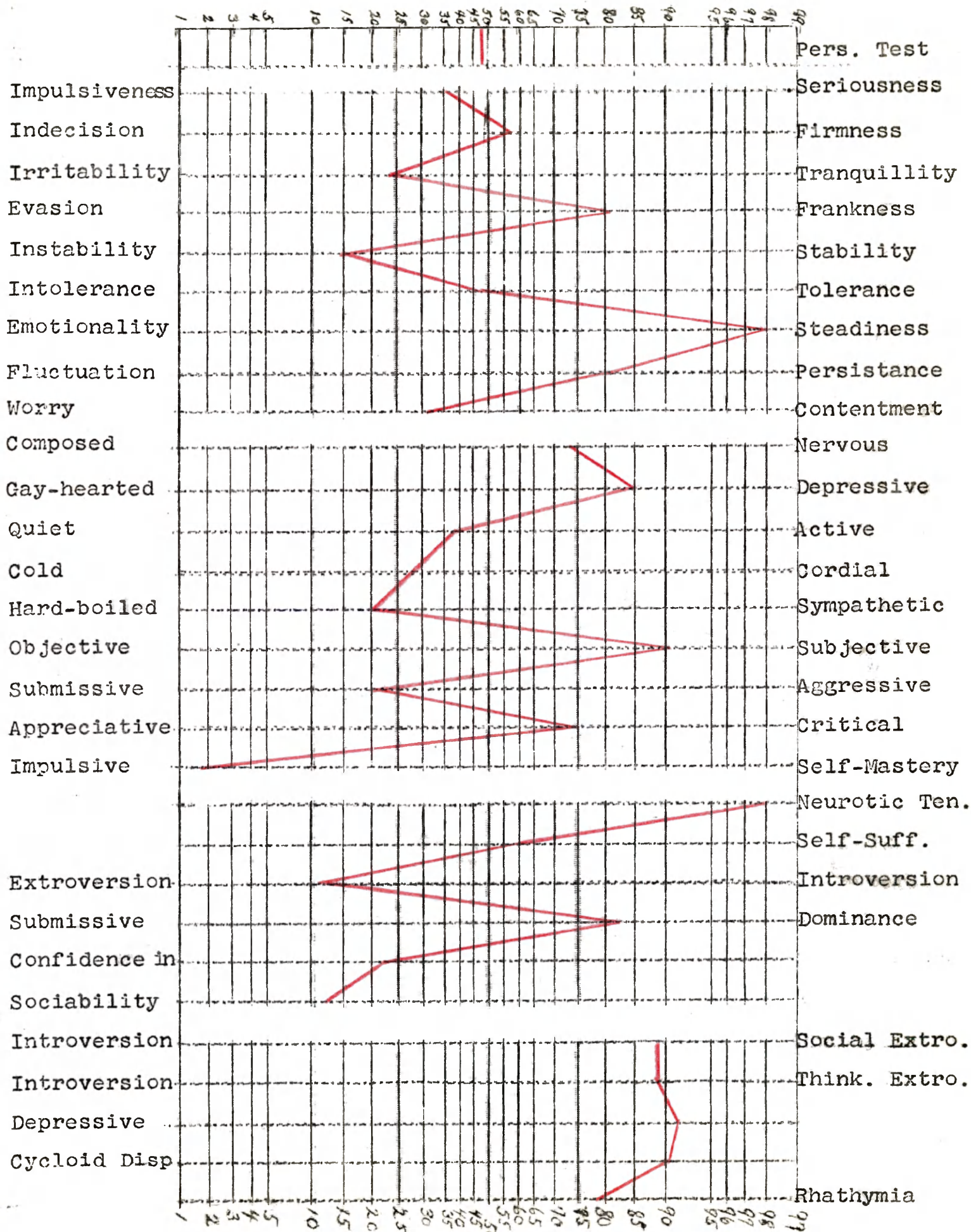
$D$	2.98	7.81	13.88	12.20	2.38
$\sigma_{m_0}$	2.02	1.56	2.18	2.31	2.06
$t$	1.48	5.00	6.37	5.28	1.56
$D$	> .05	< .01	< .01	< .01	> .05



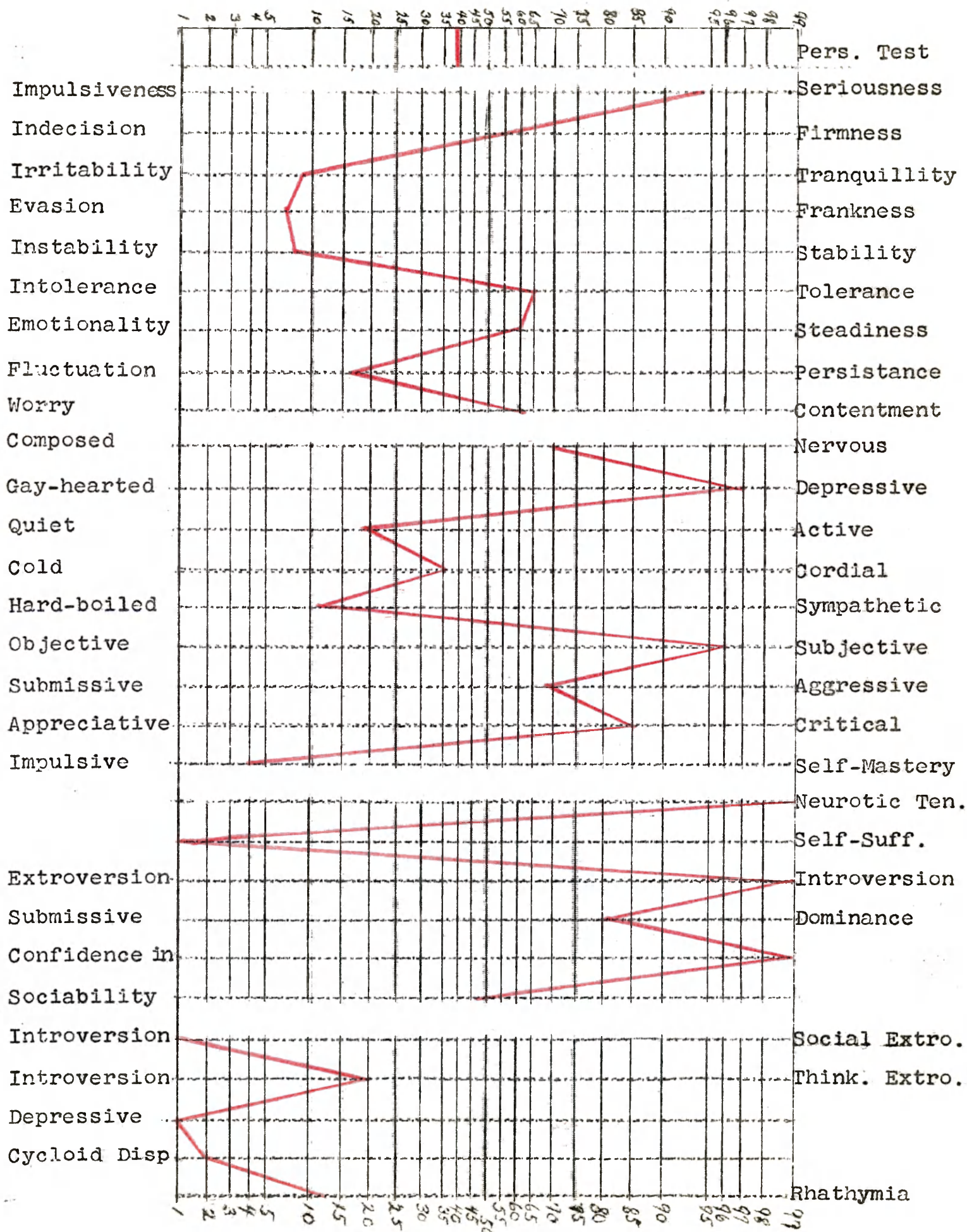
## APPENDIX C1

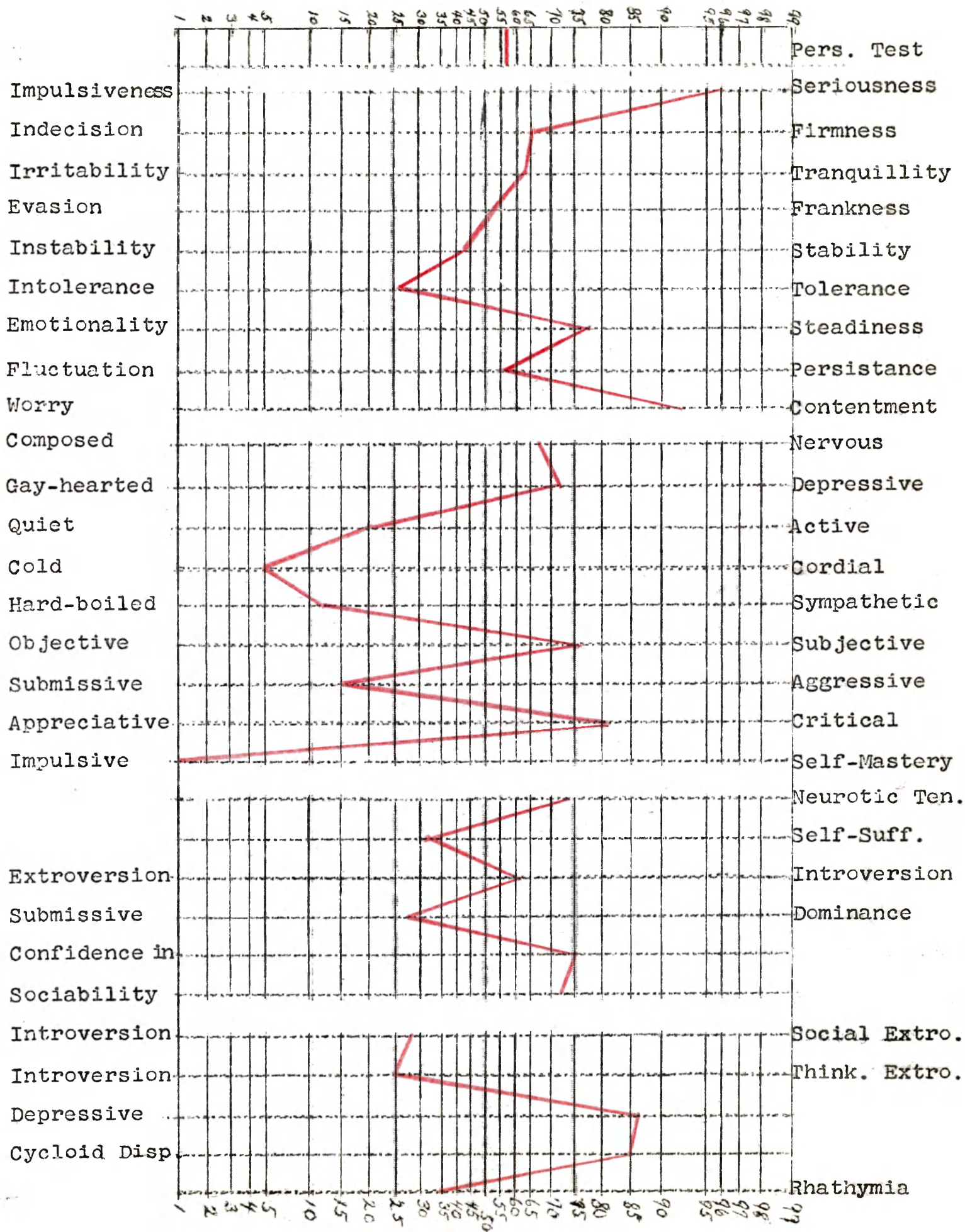
PROFILES SHOWING THE MEAN CONFIGURATION  
OF THE JOHNSON TEMPERAMENT ANALYSIS



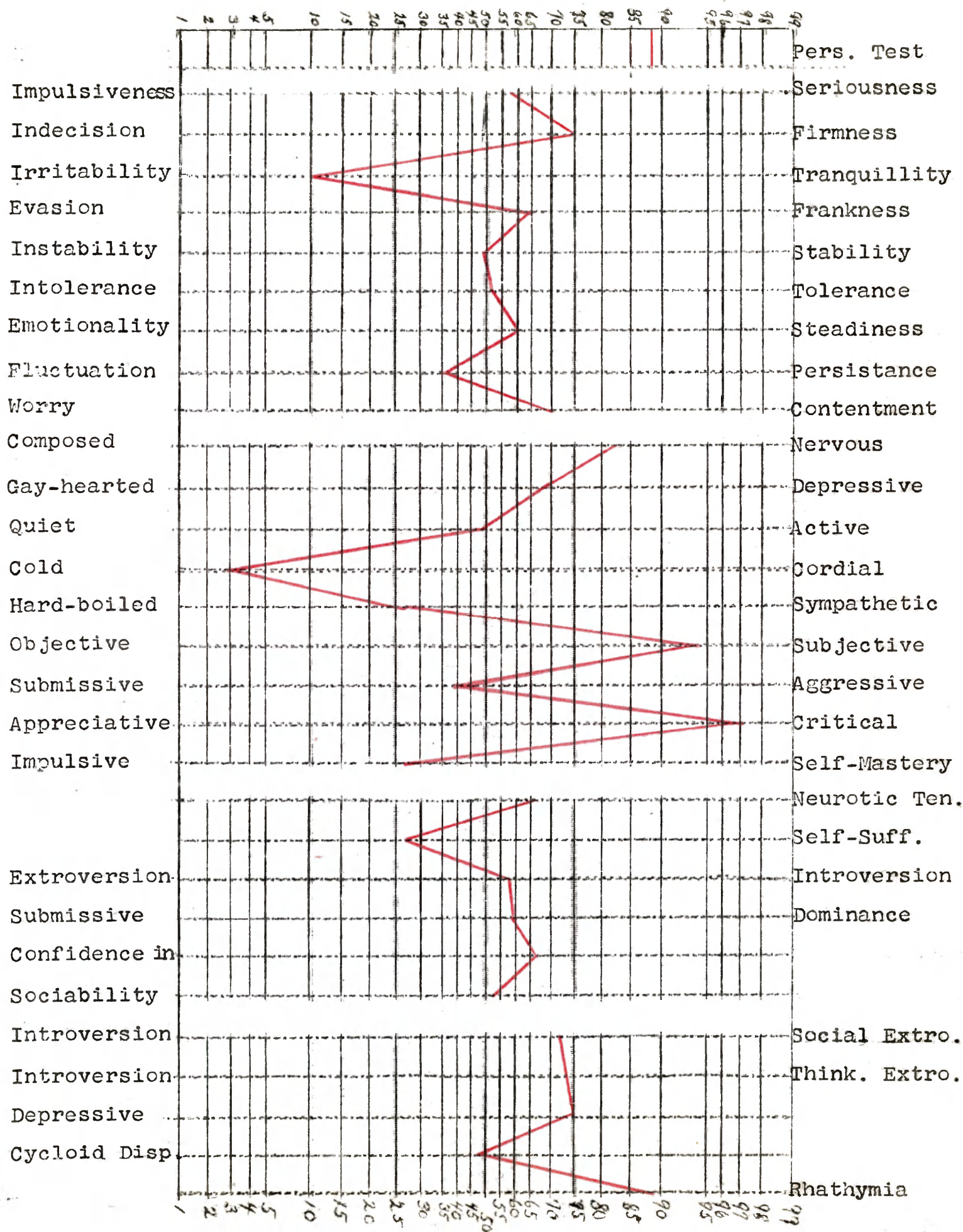


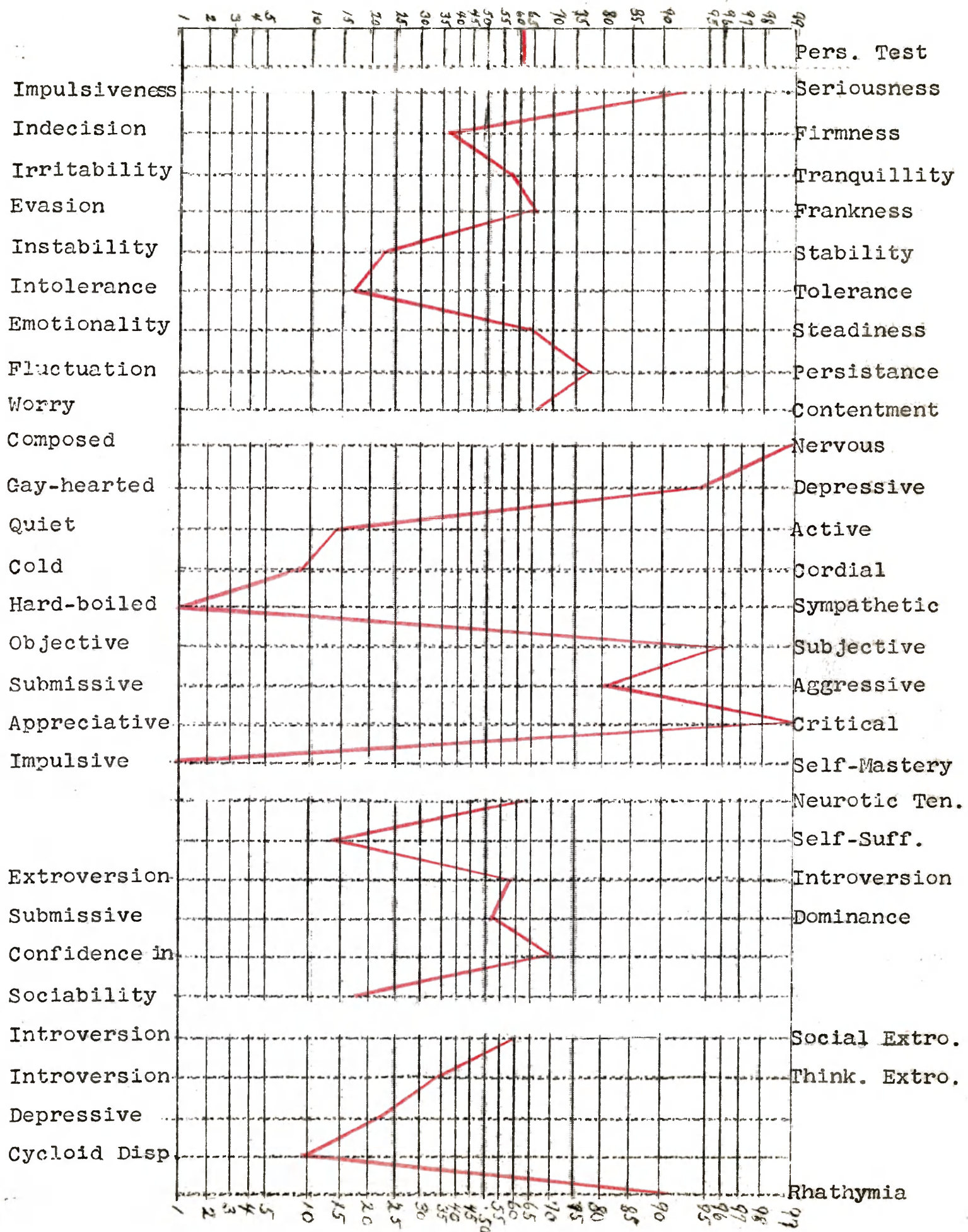




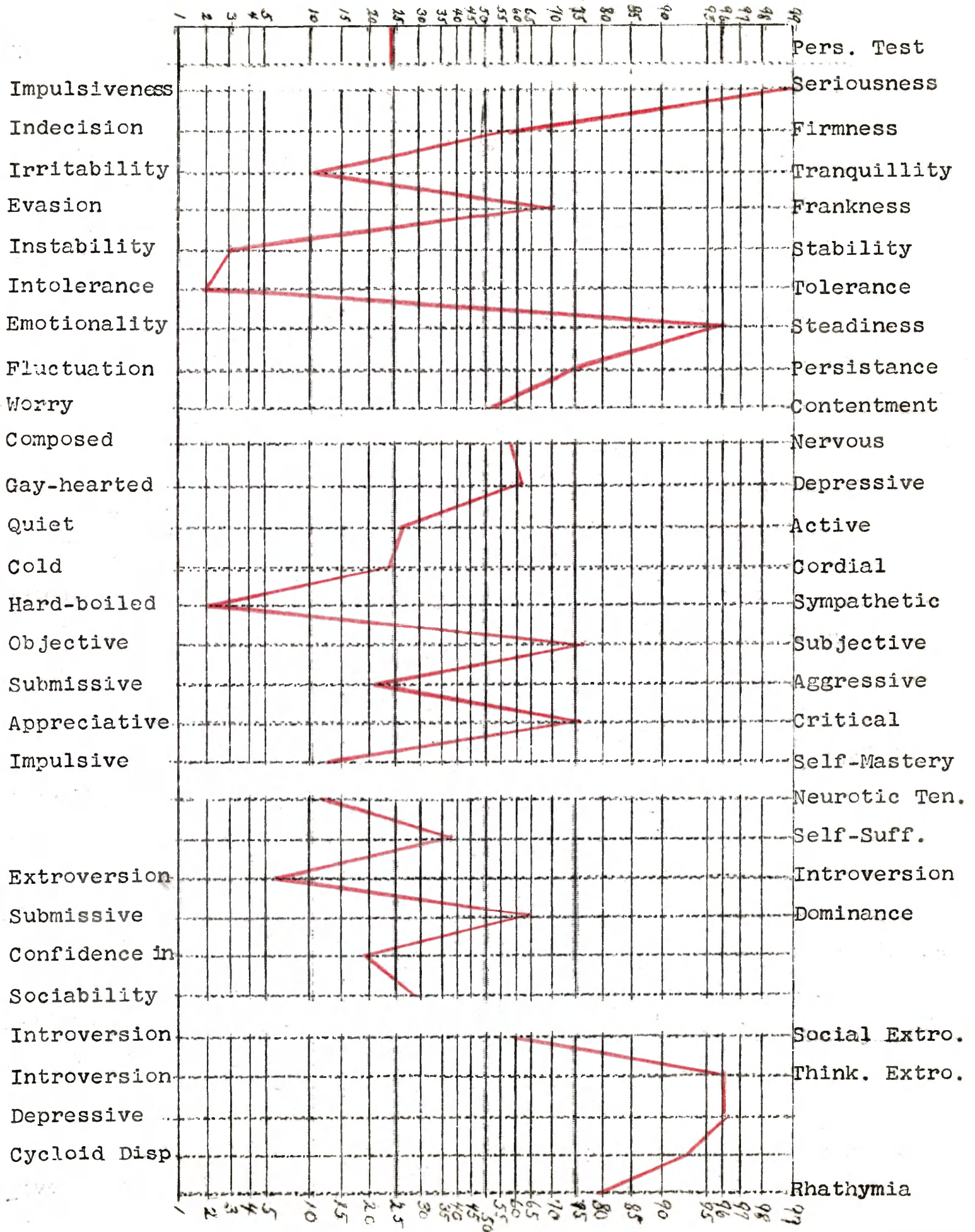




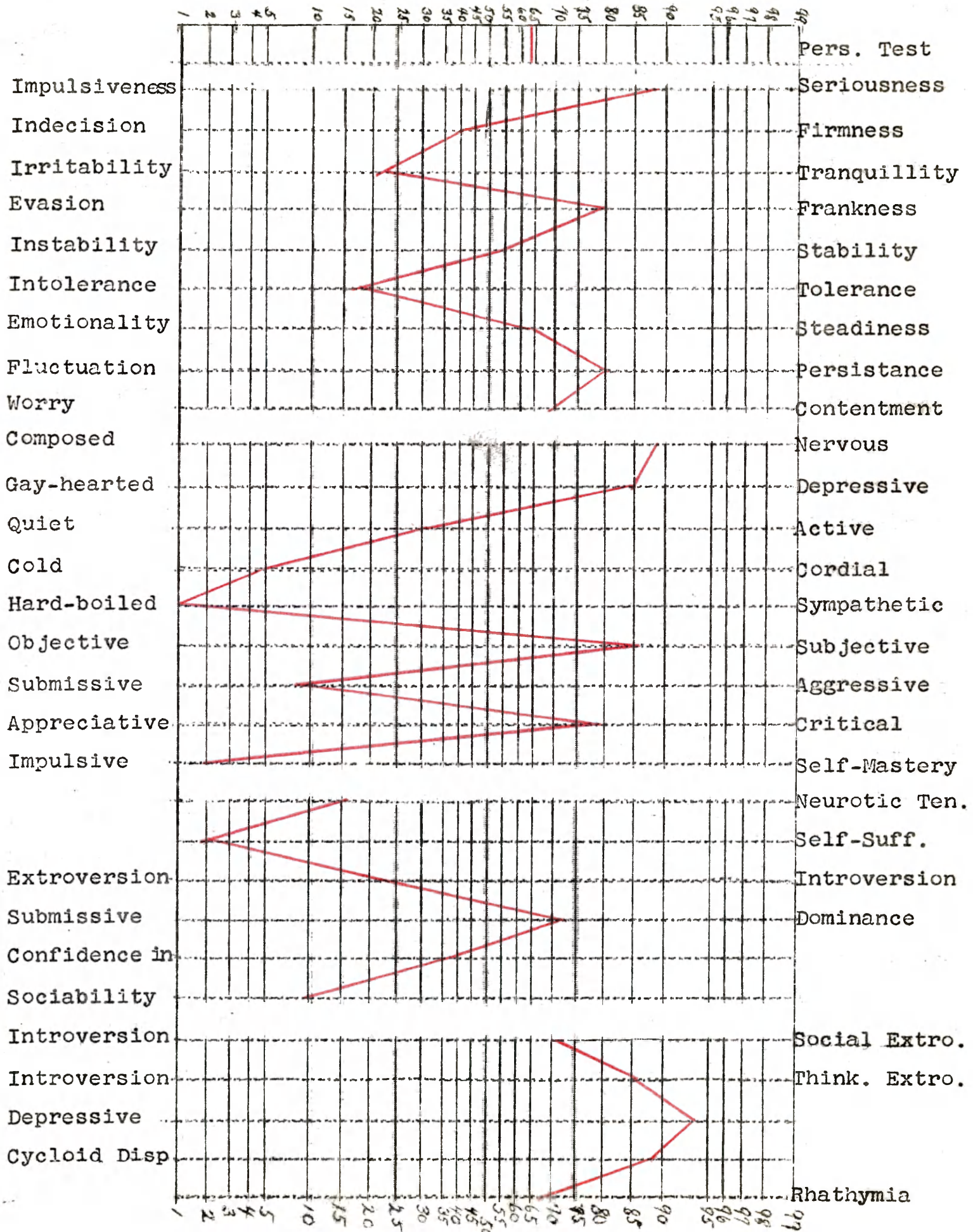


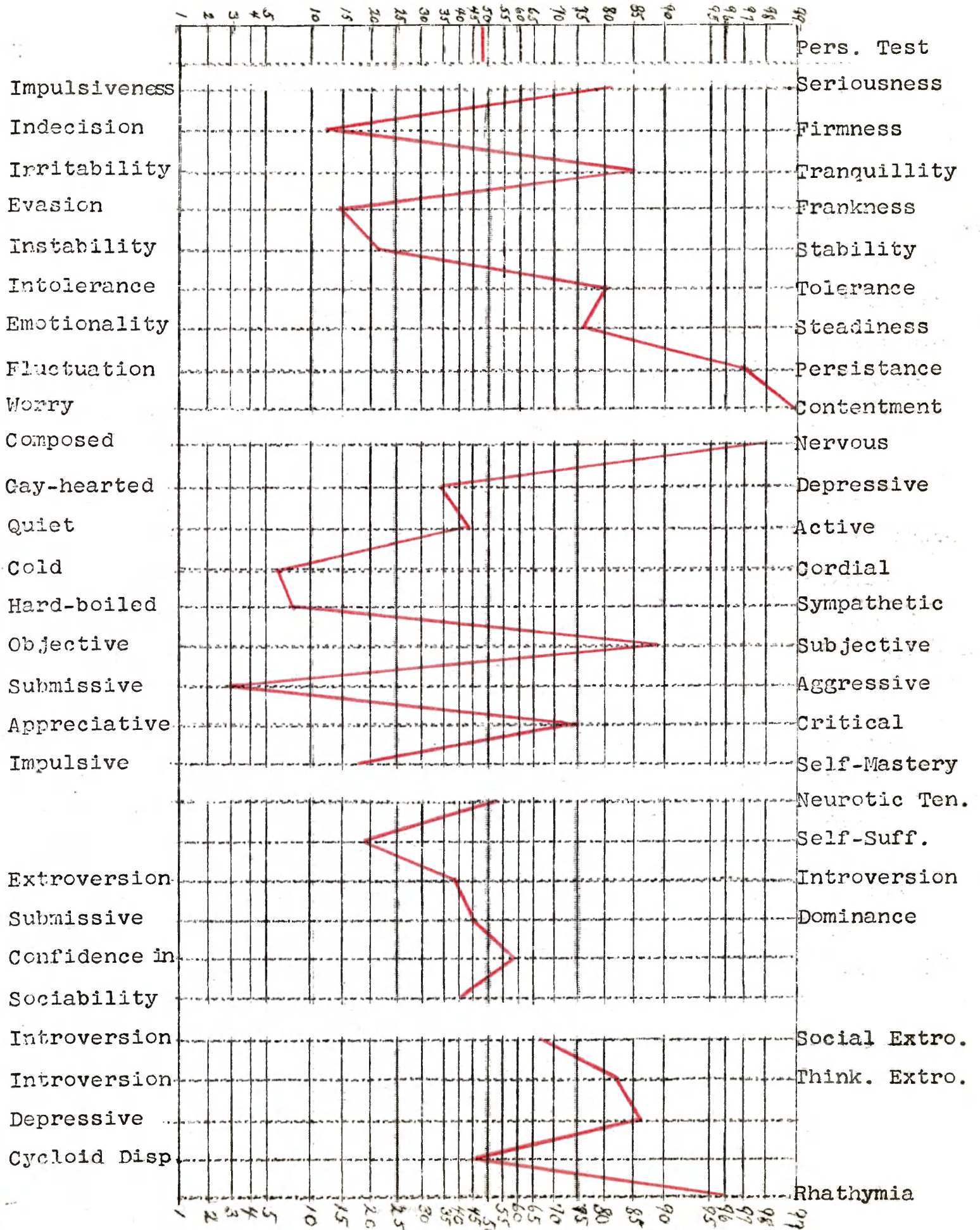




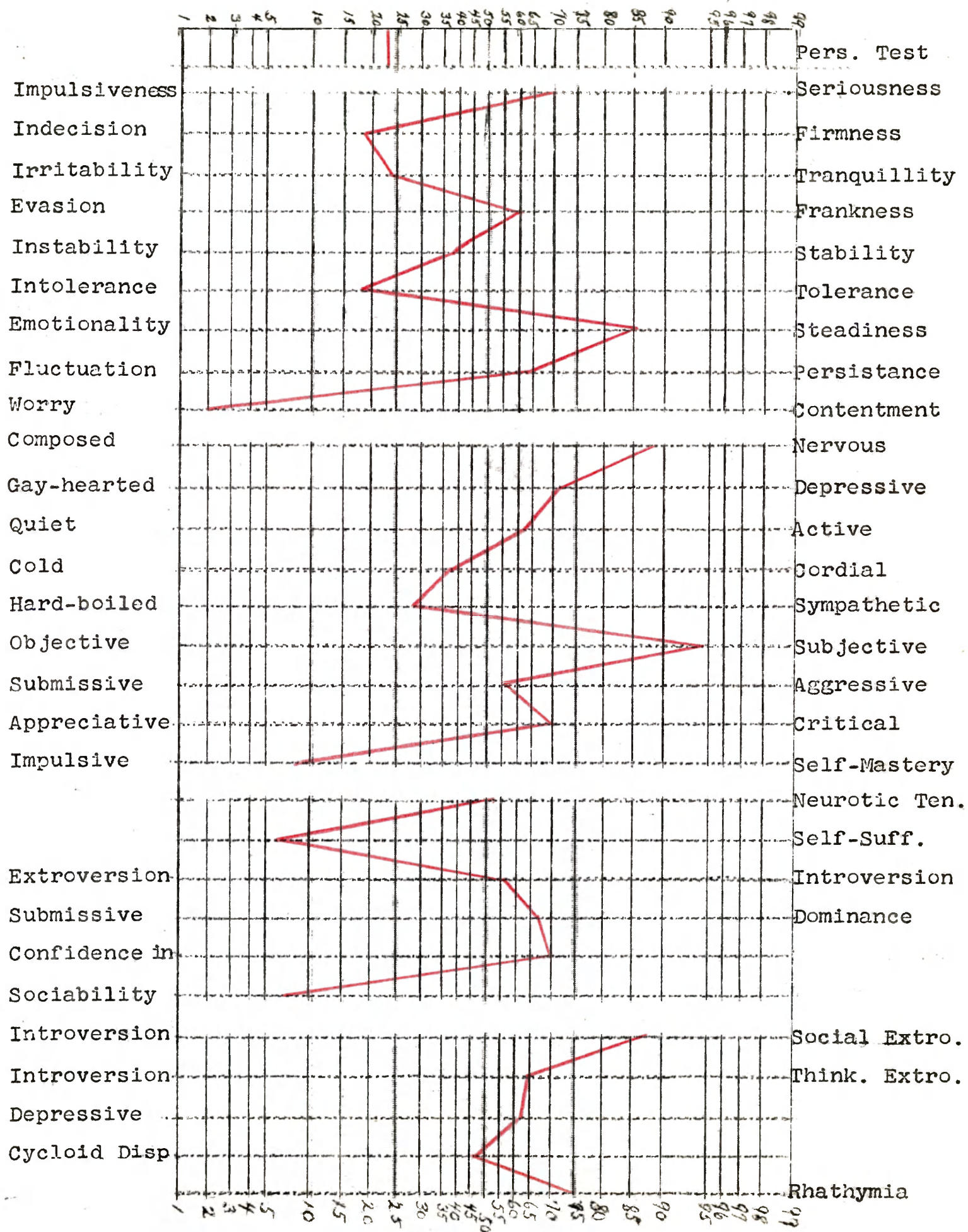


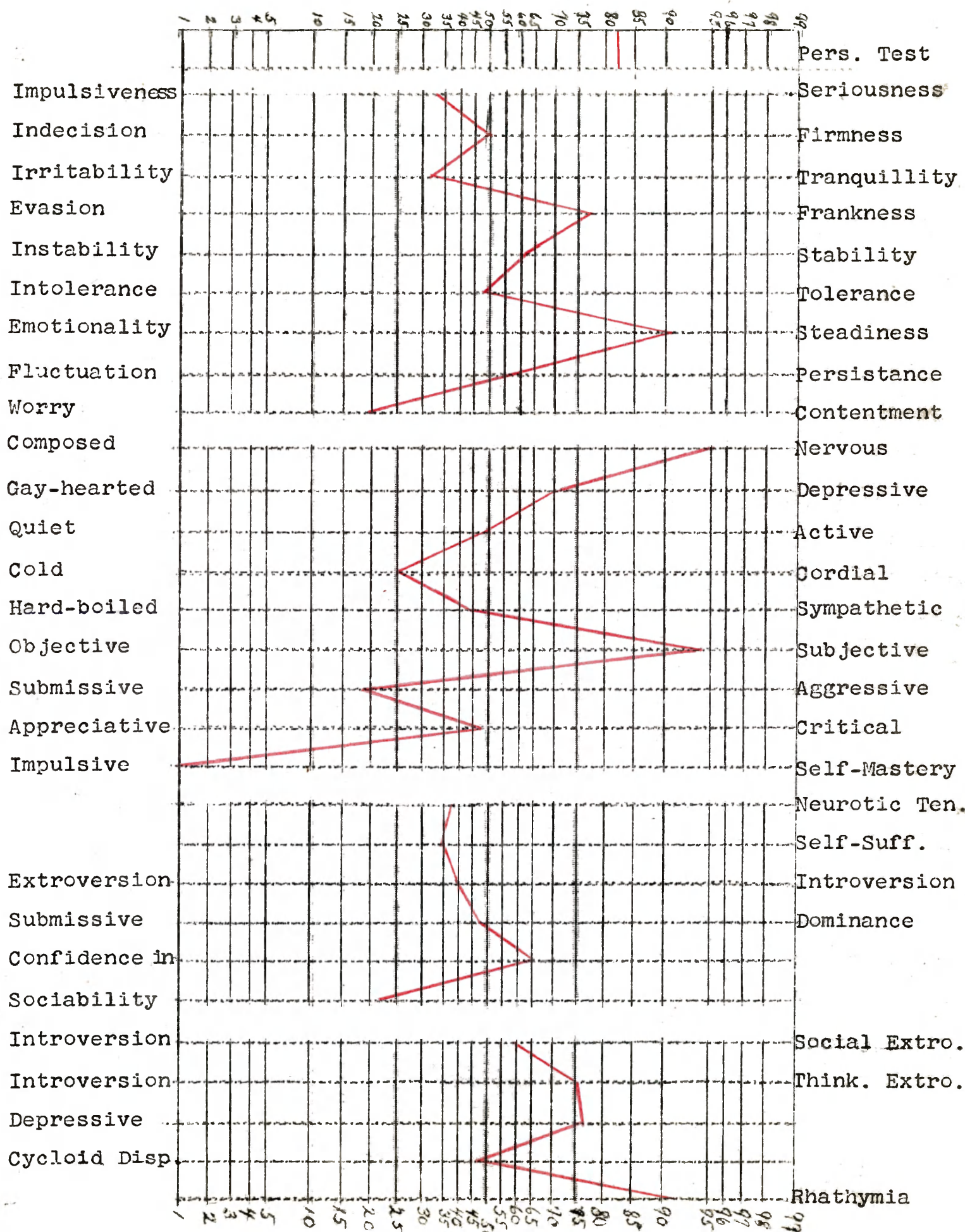








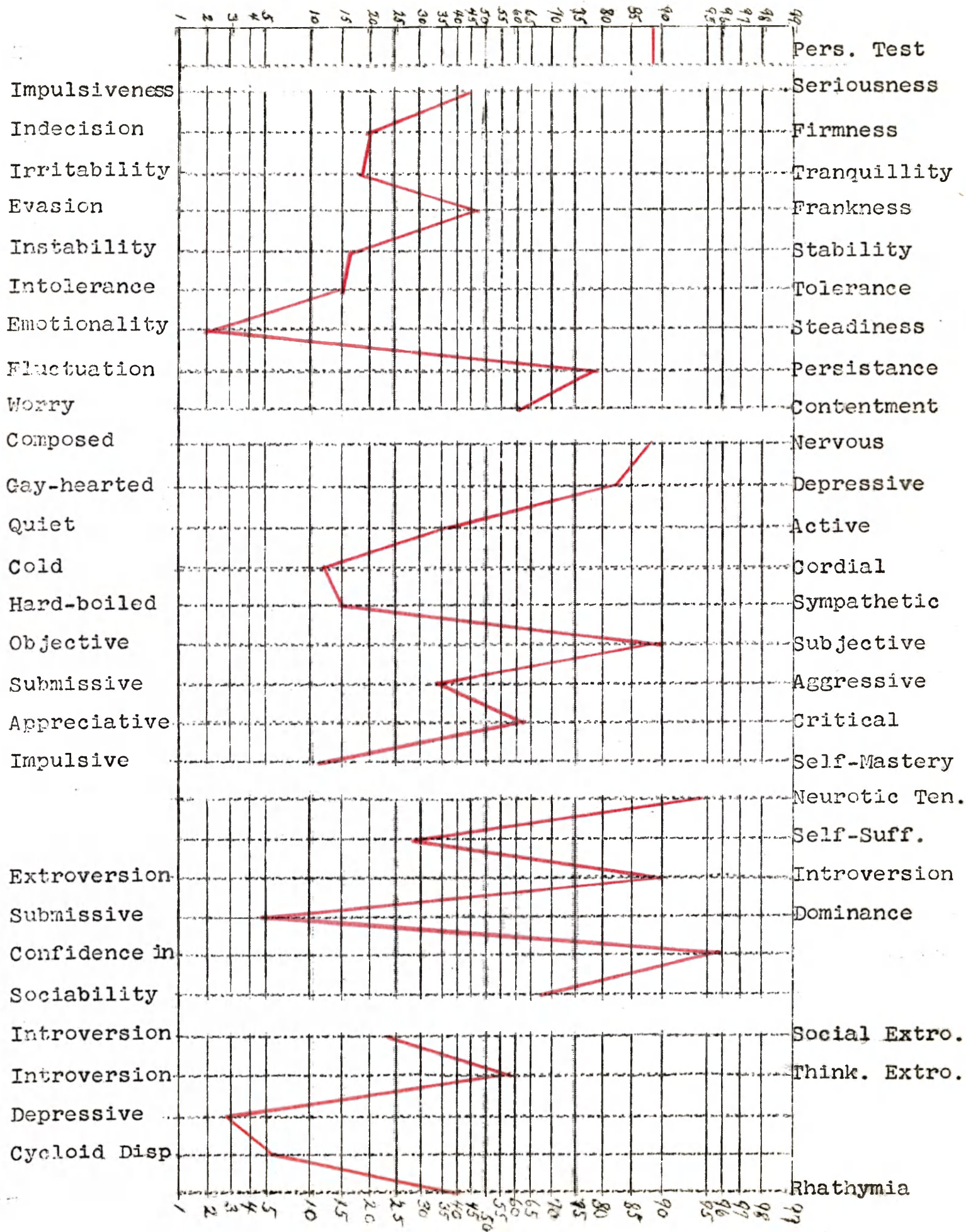


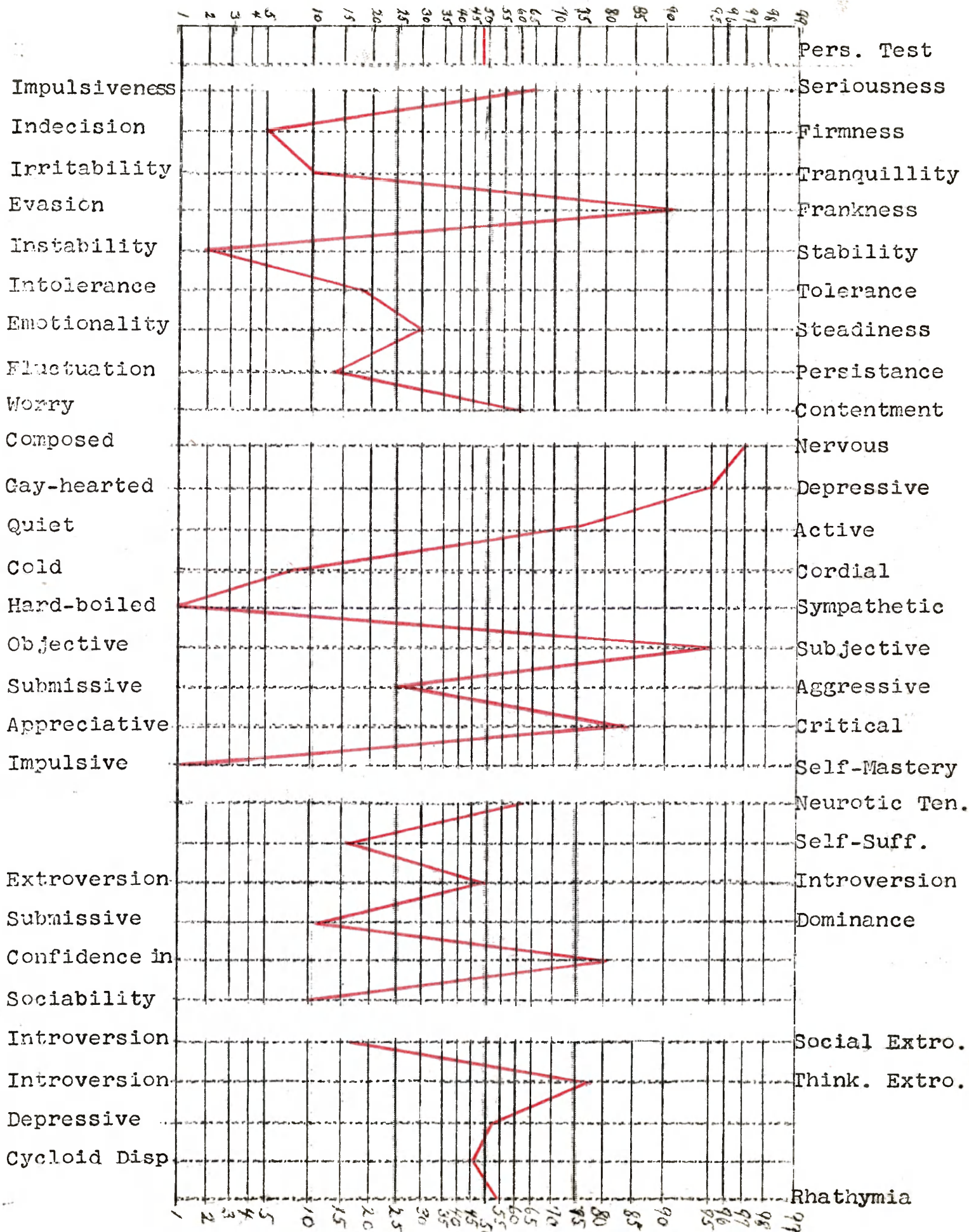


## APPENDIX C2

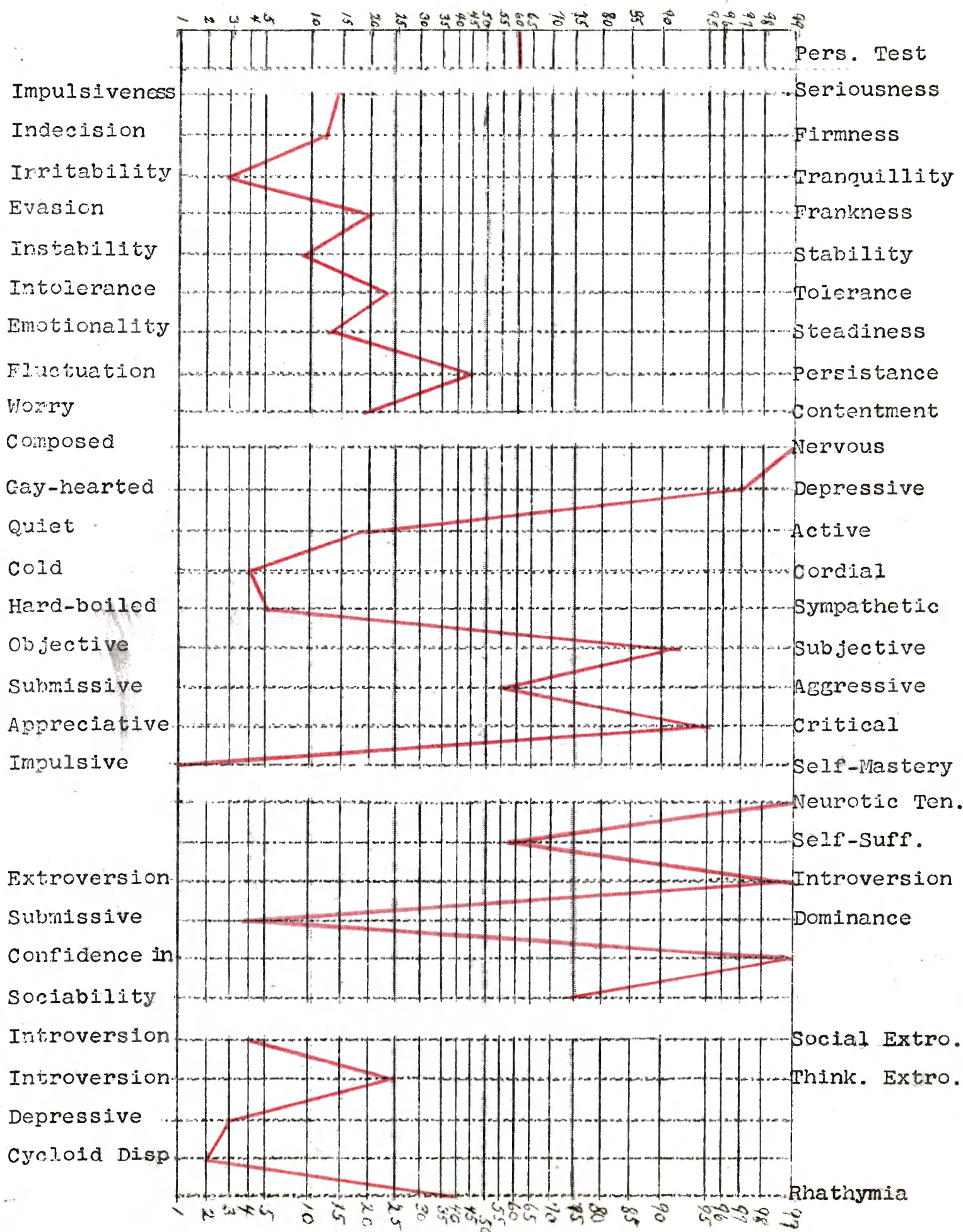
PROFILES SHOWING THE MEAN CONFIGURATION OF  
BOTH THE JOHNSON TEMPERAMENT ANALYSIS  
AND THE PERSONALITY INVENTORY



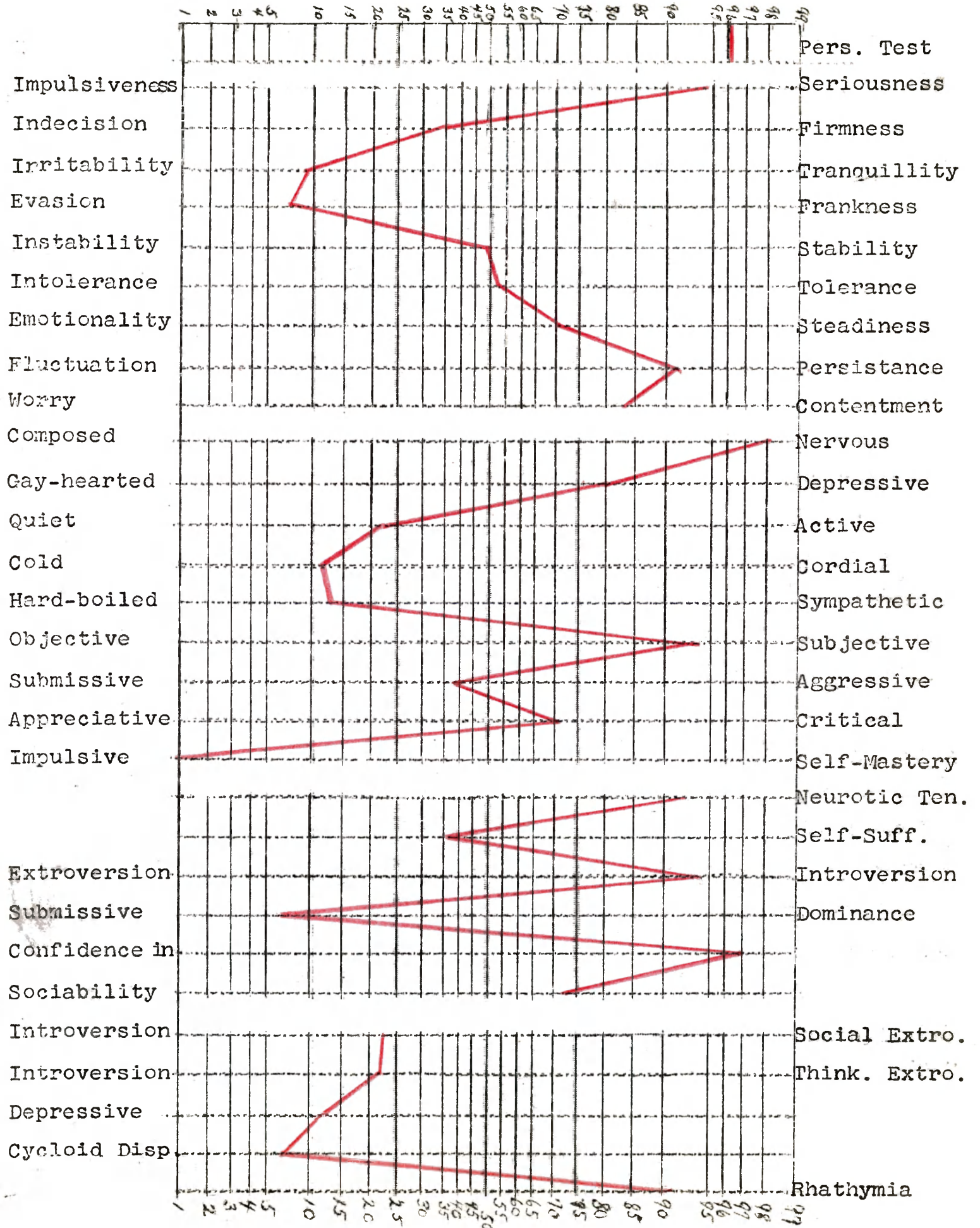


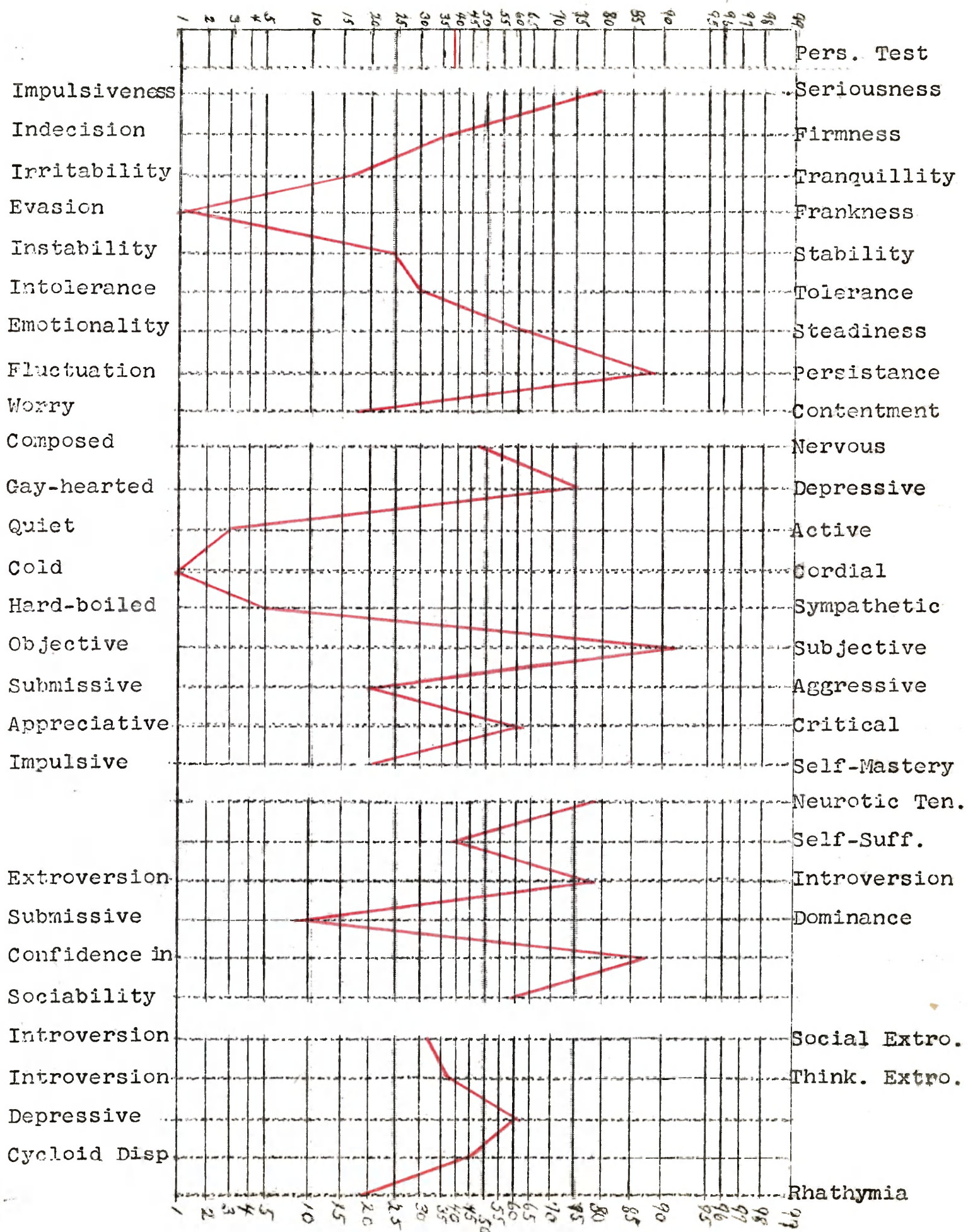




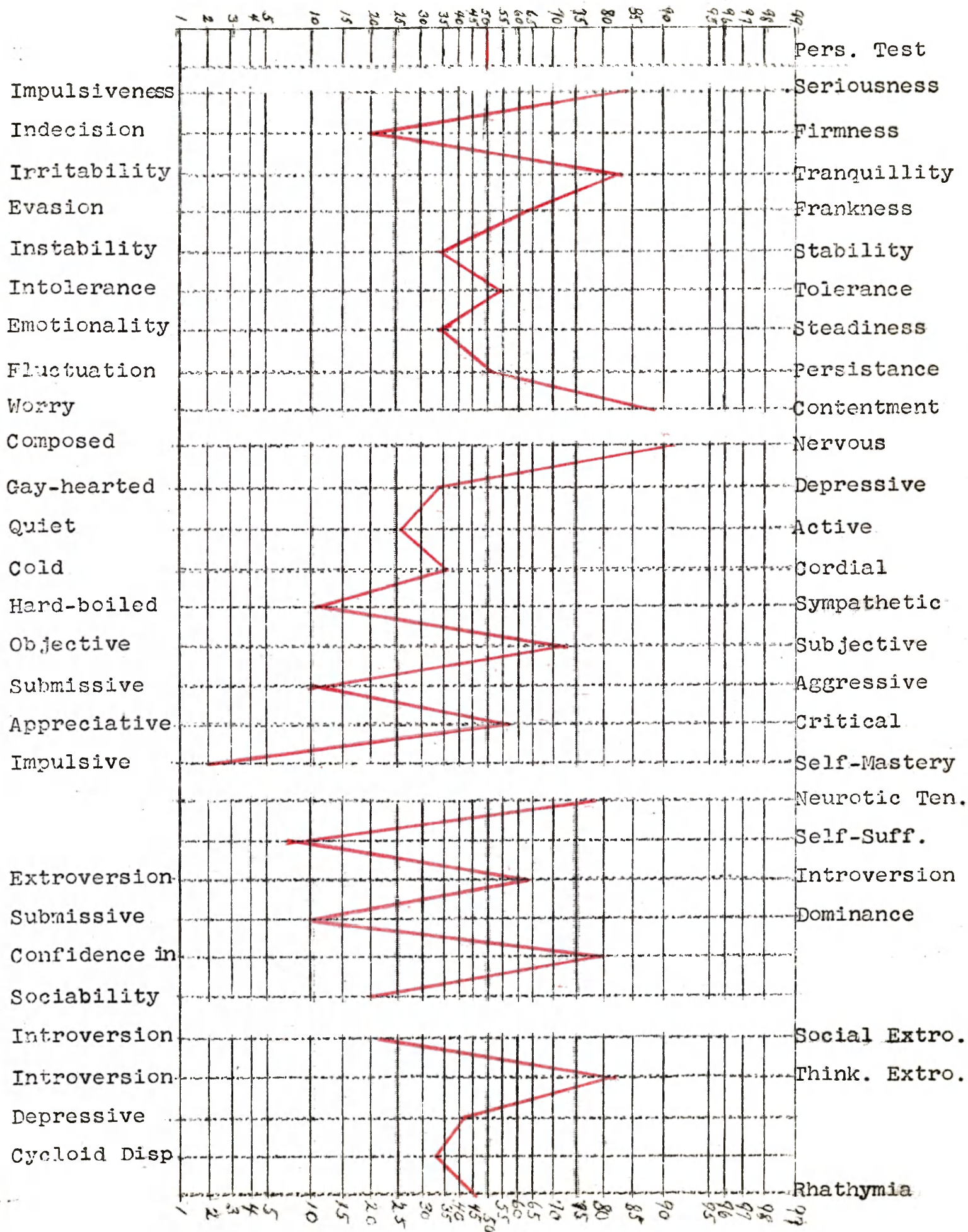


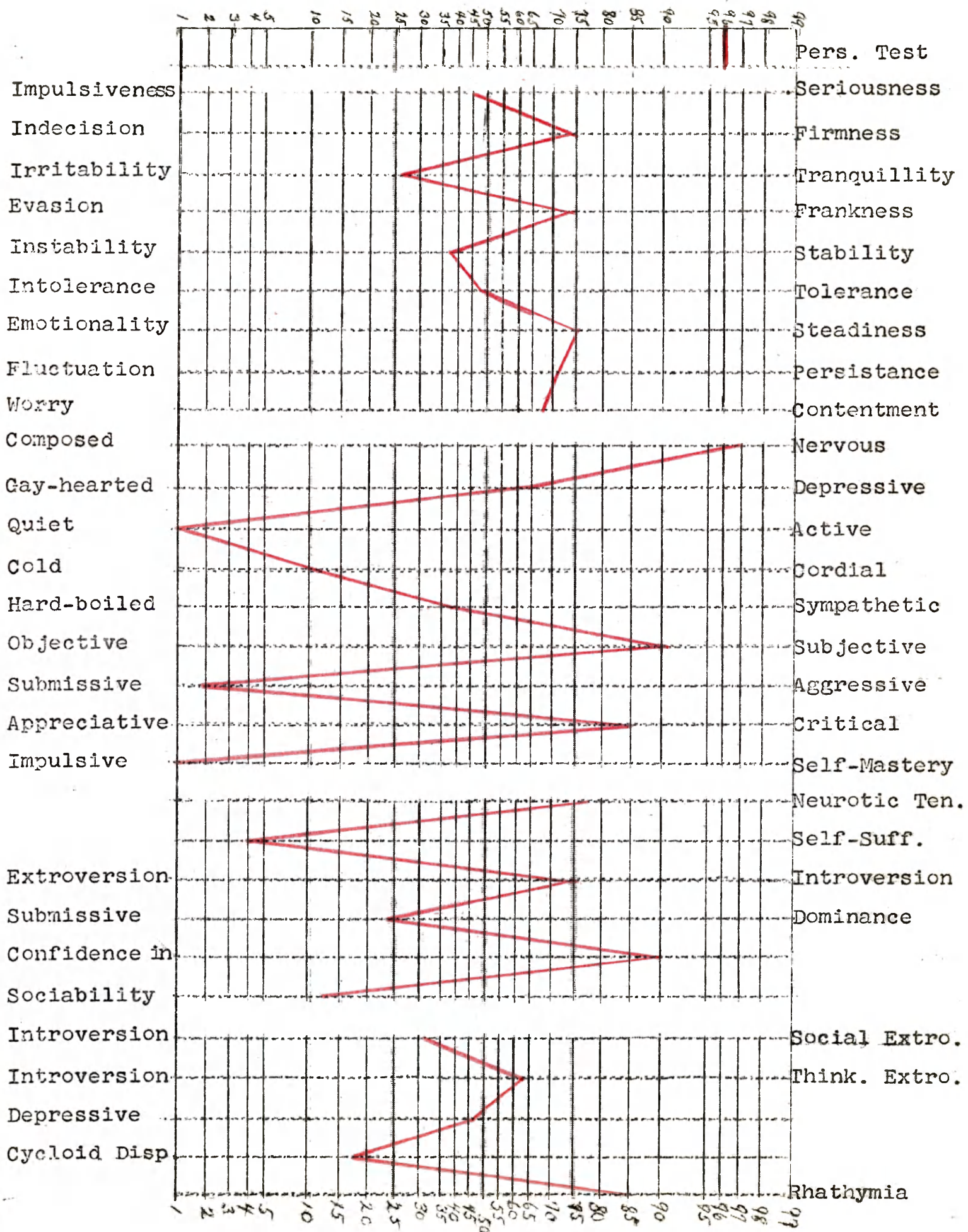




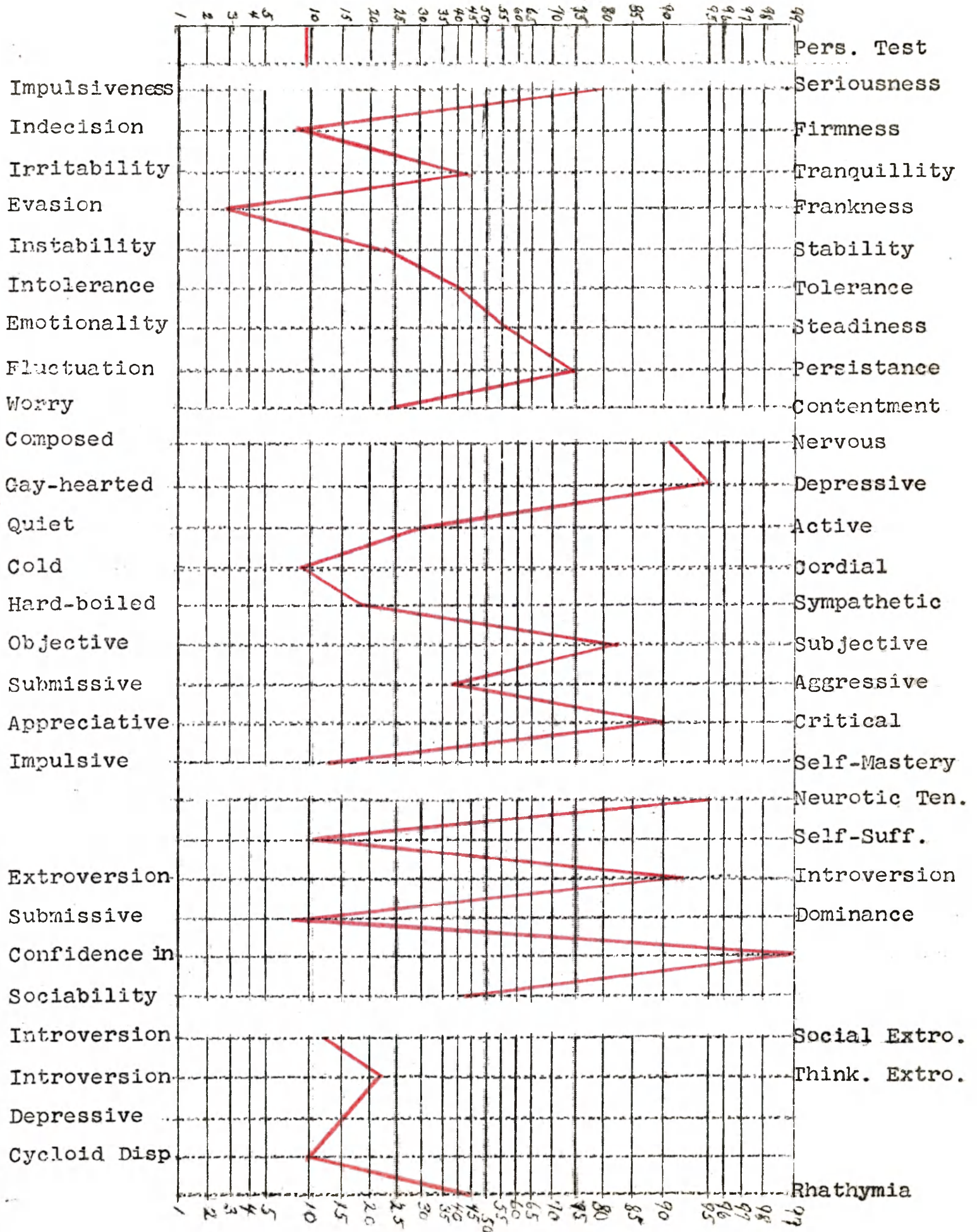




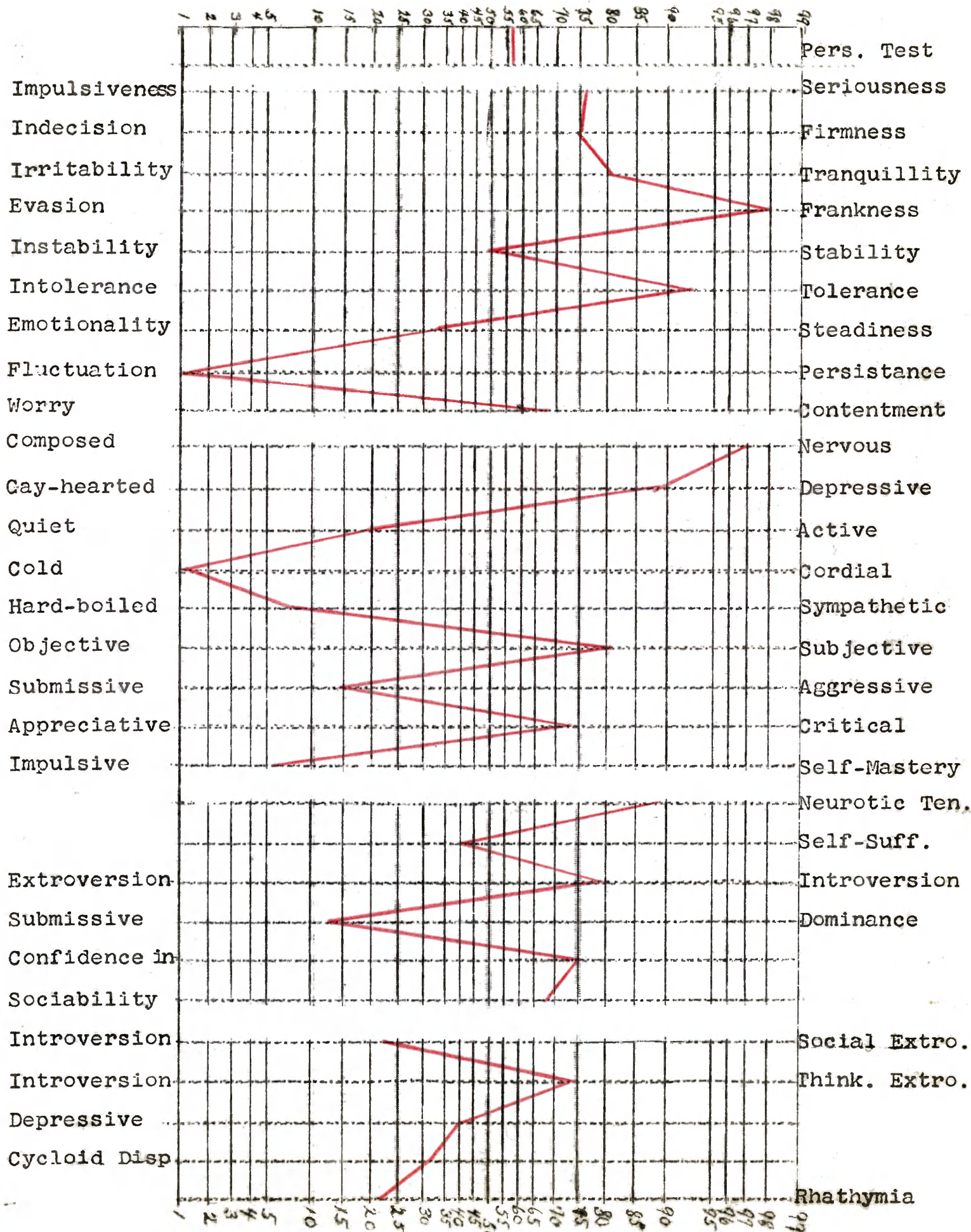








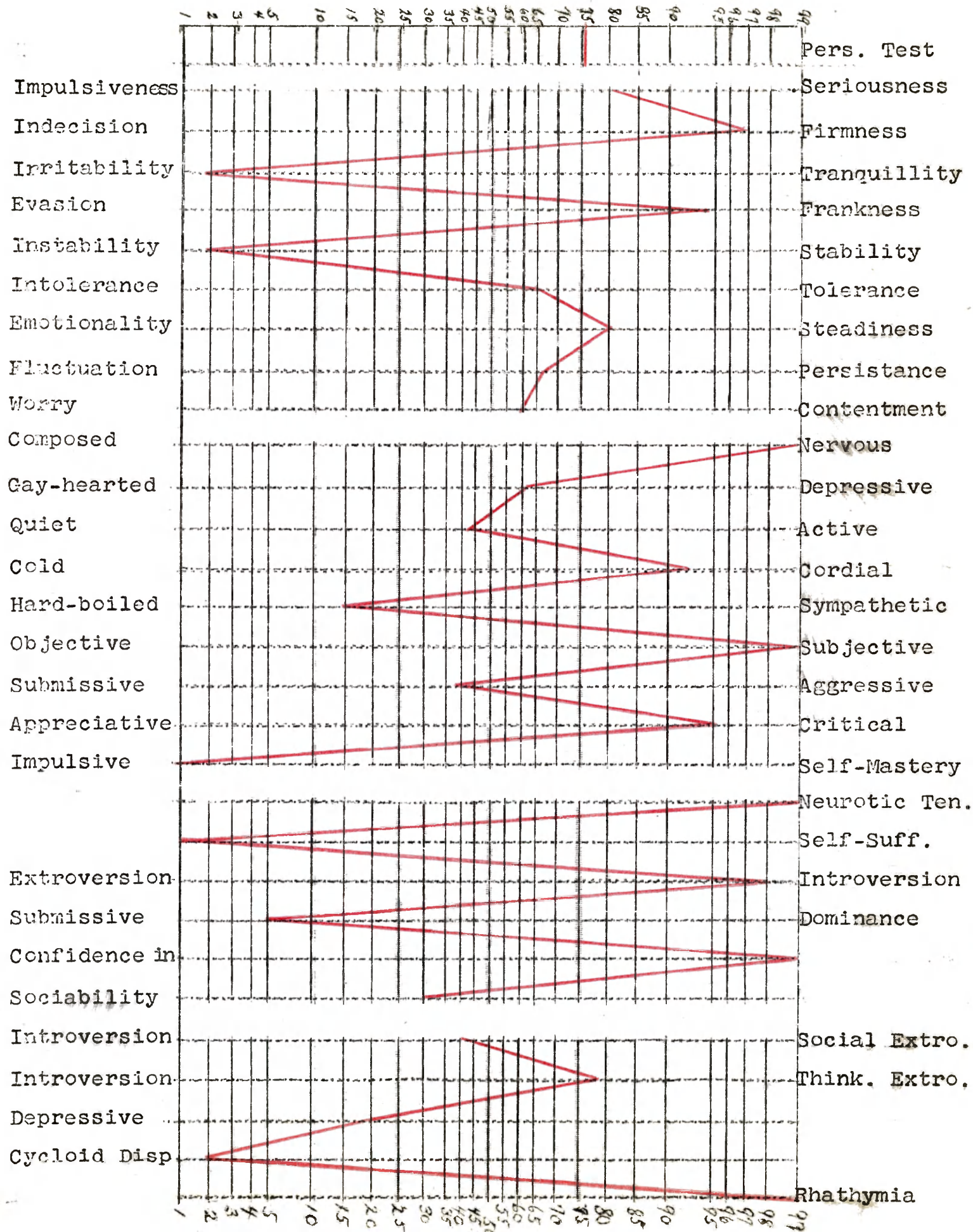




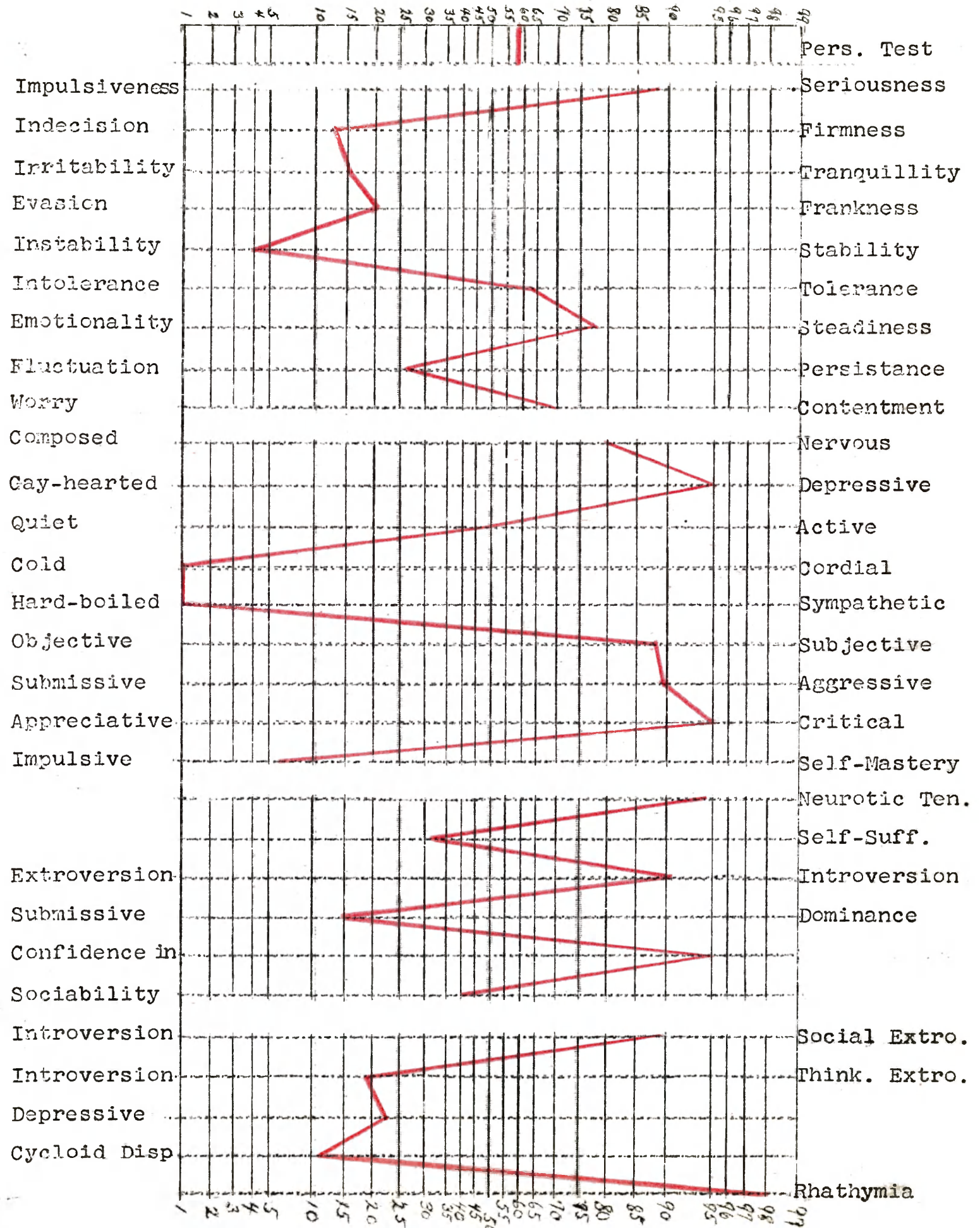
**APPENDIX C3**

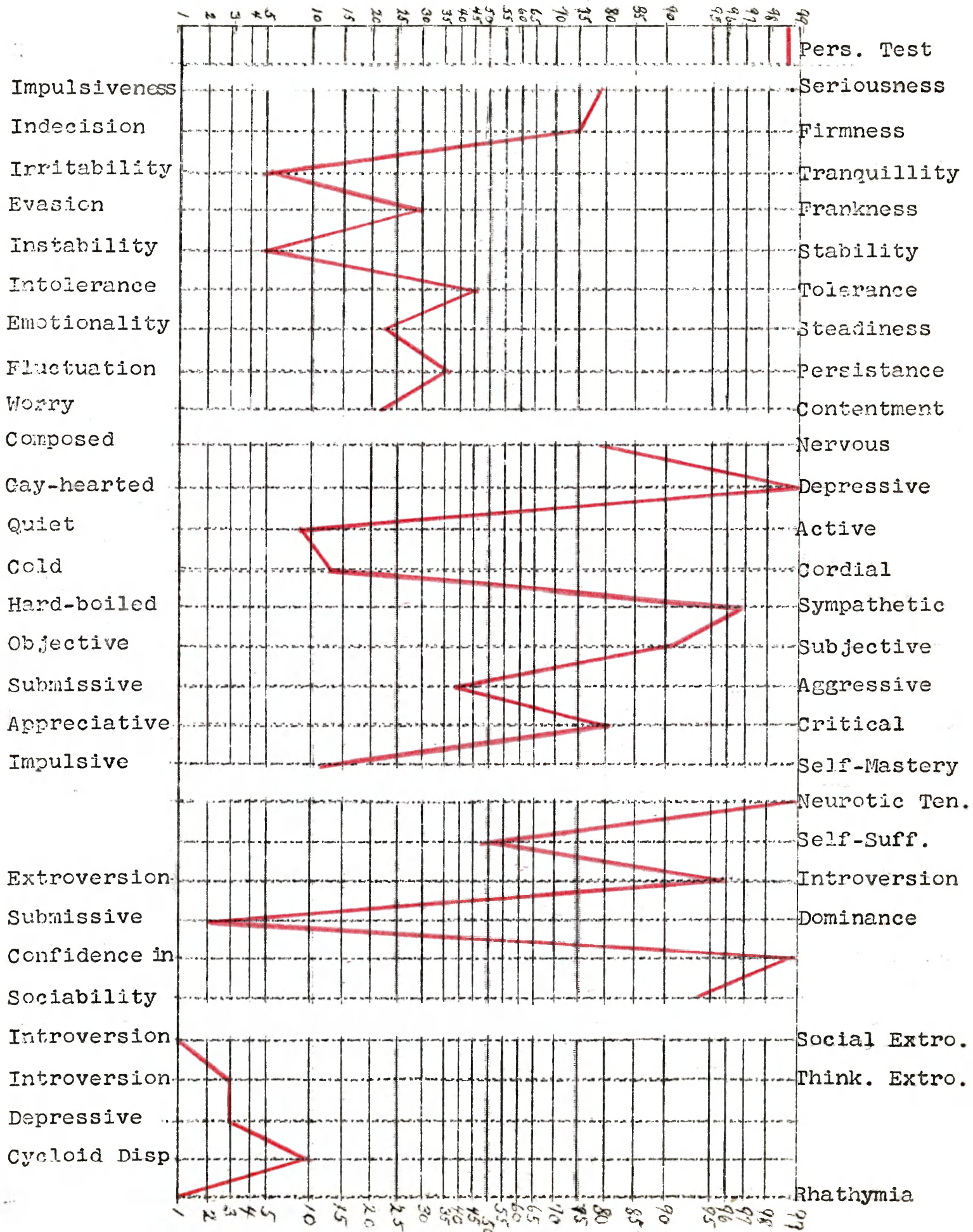
**PROFILES SHOWING THE MEAN CONFIGURATION  
OF THE PERSONALITY INVENTORY**



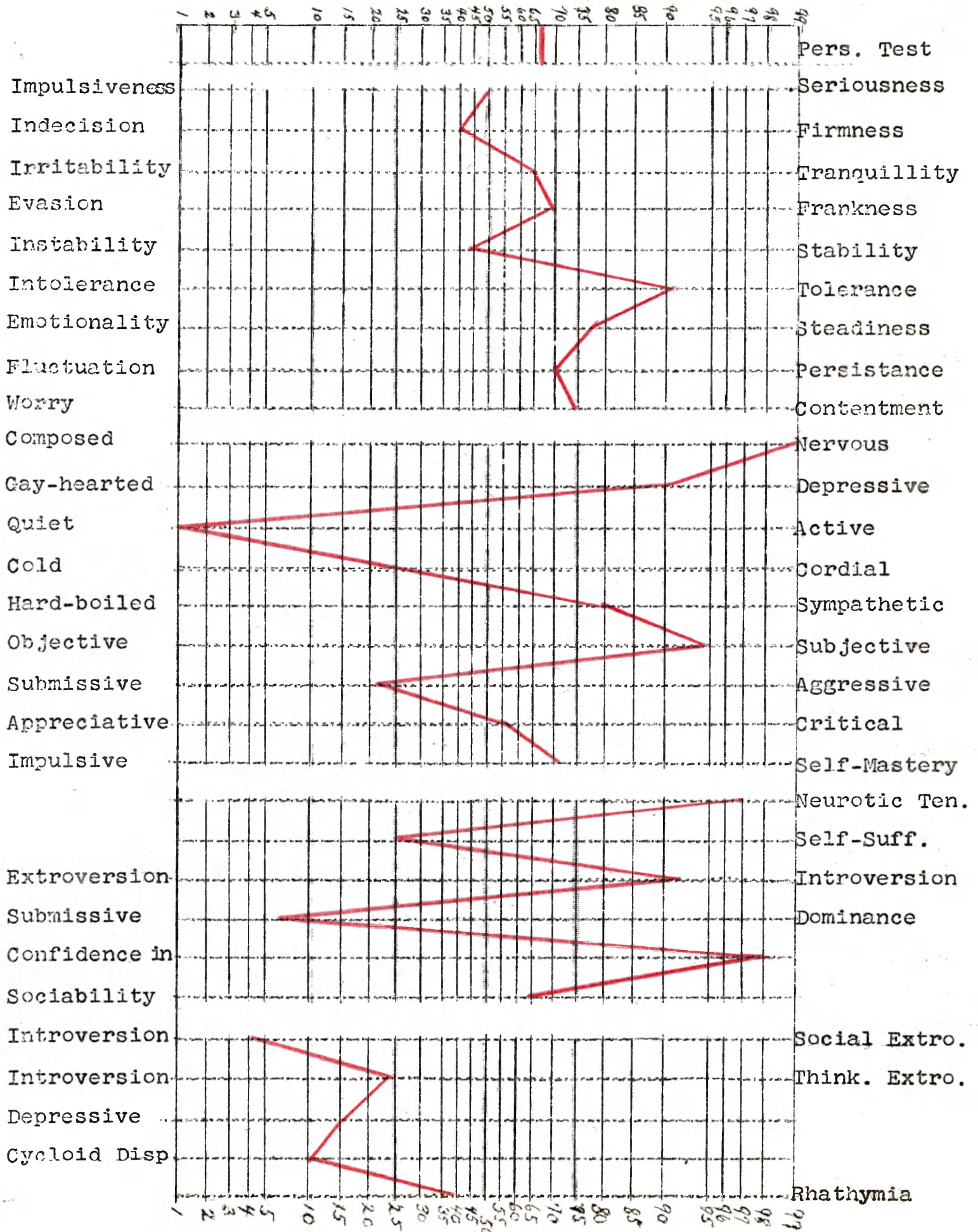


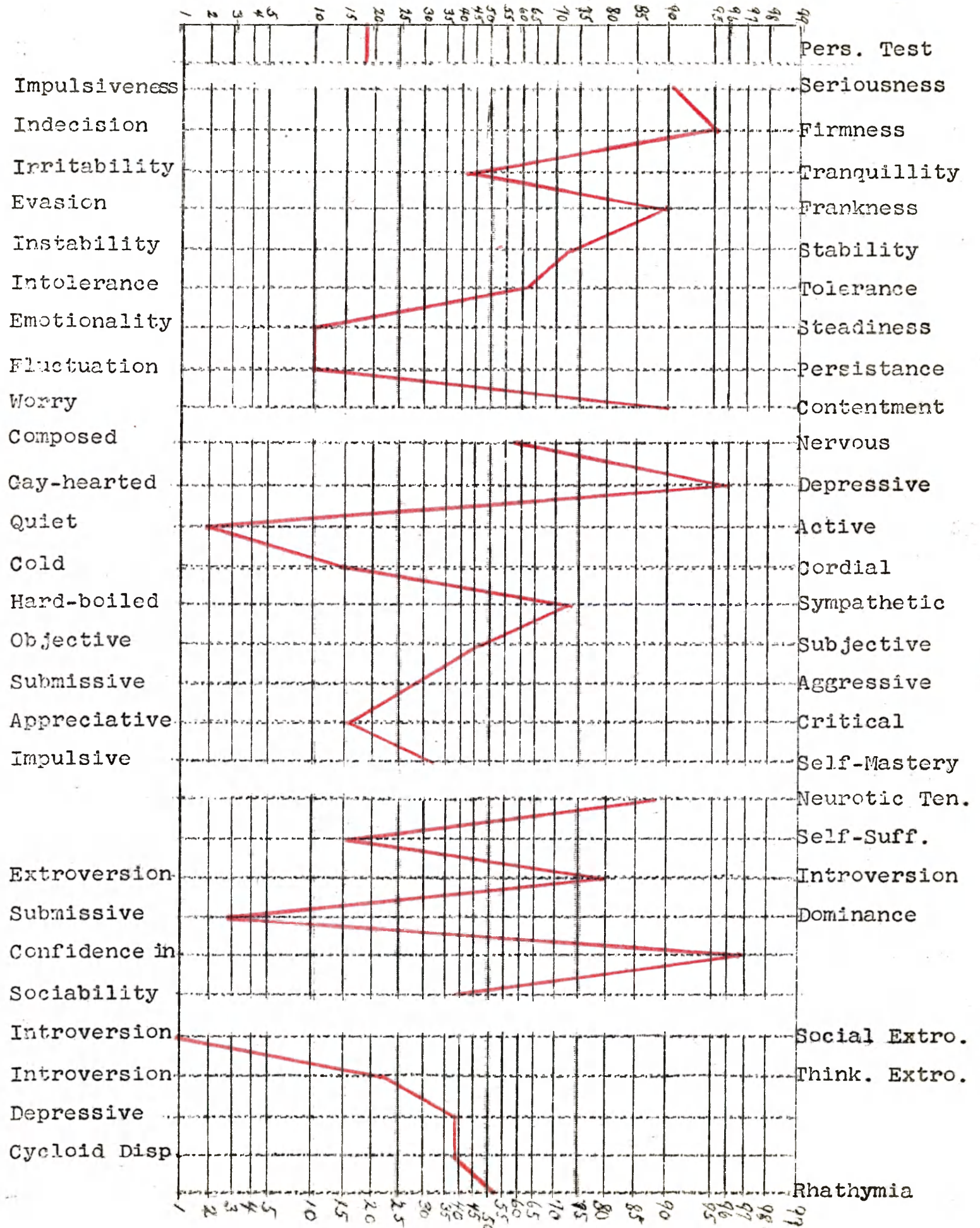




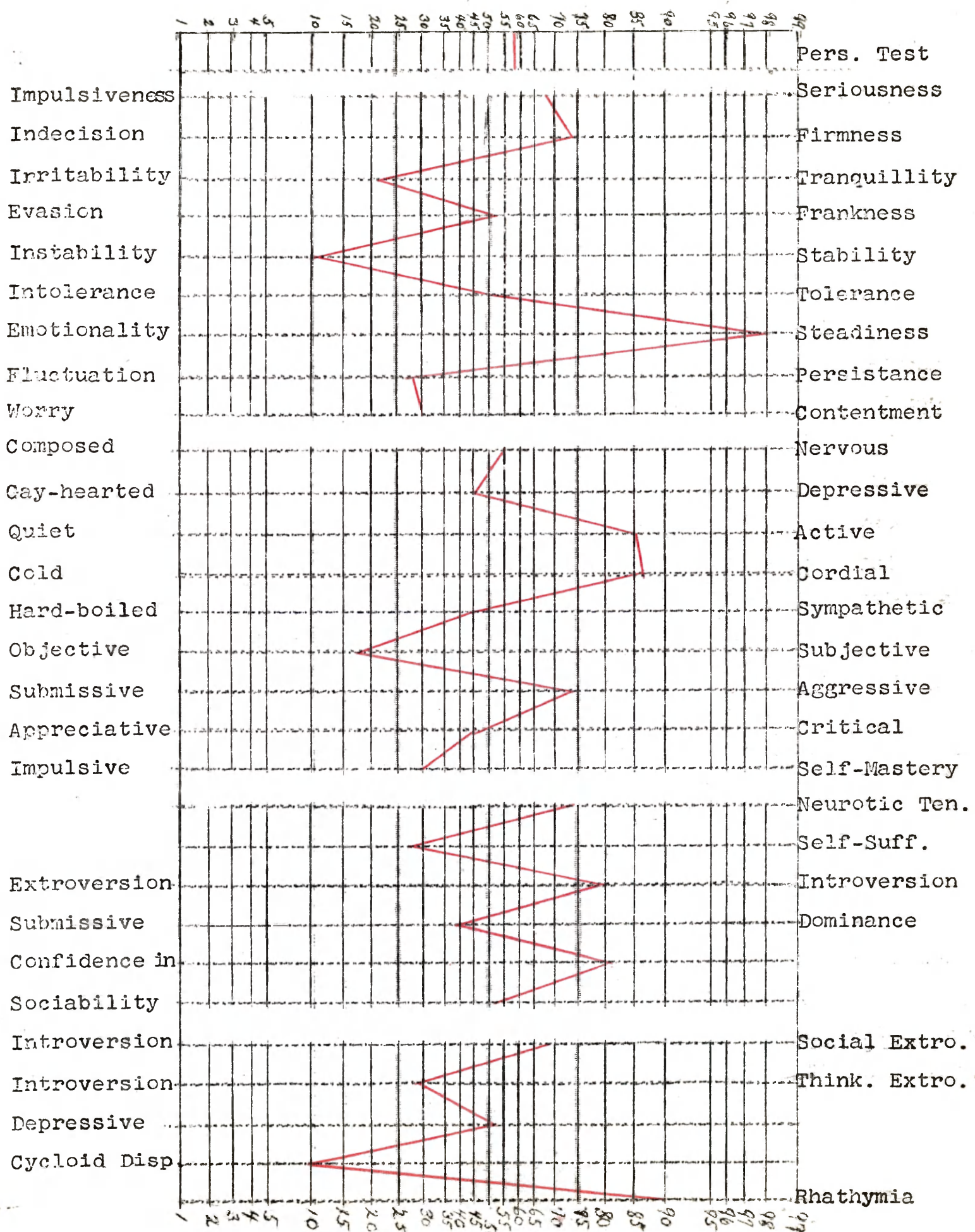


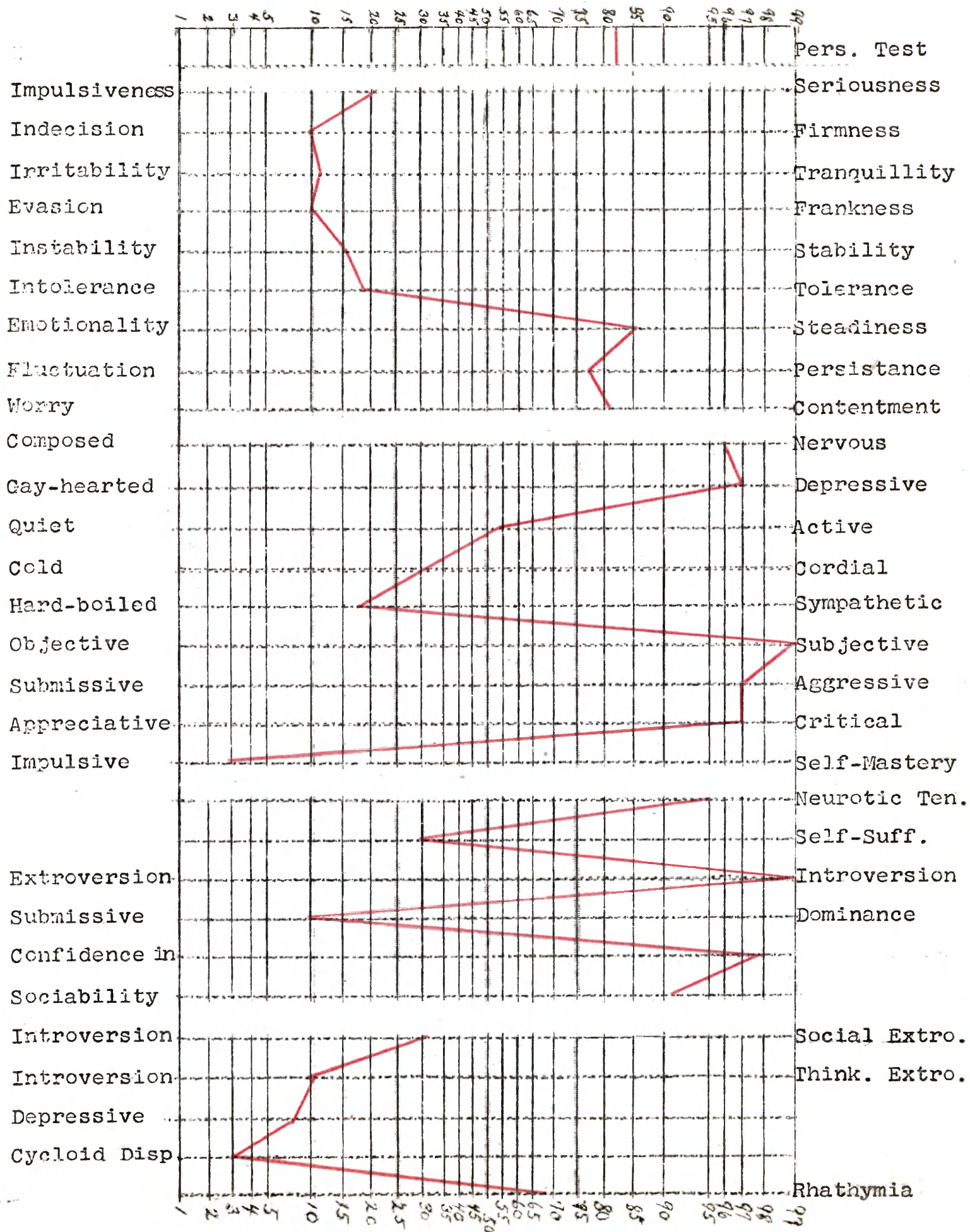




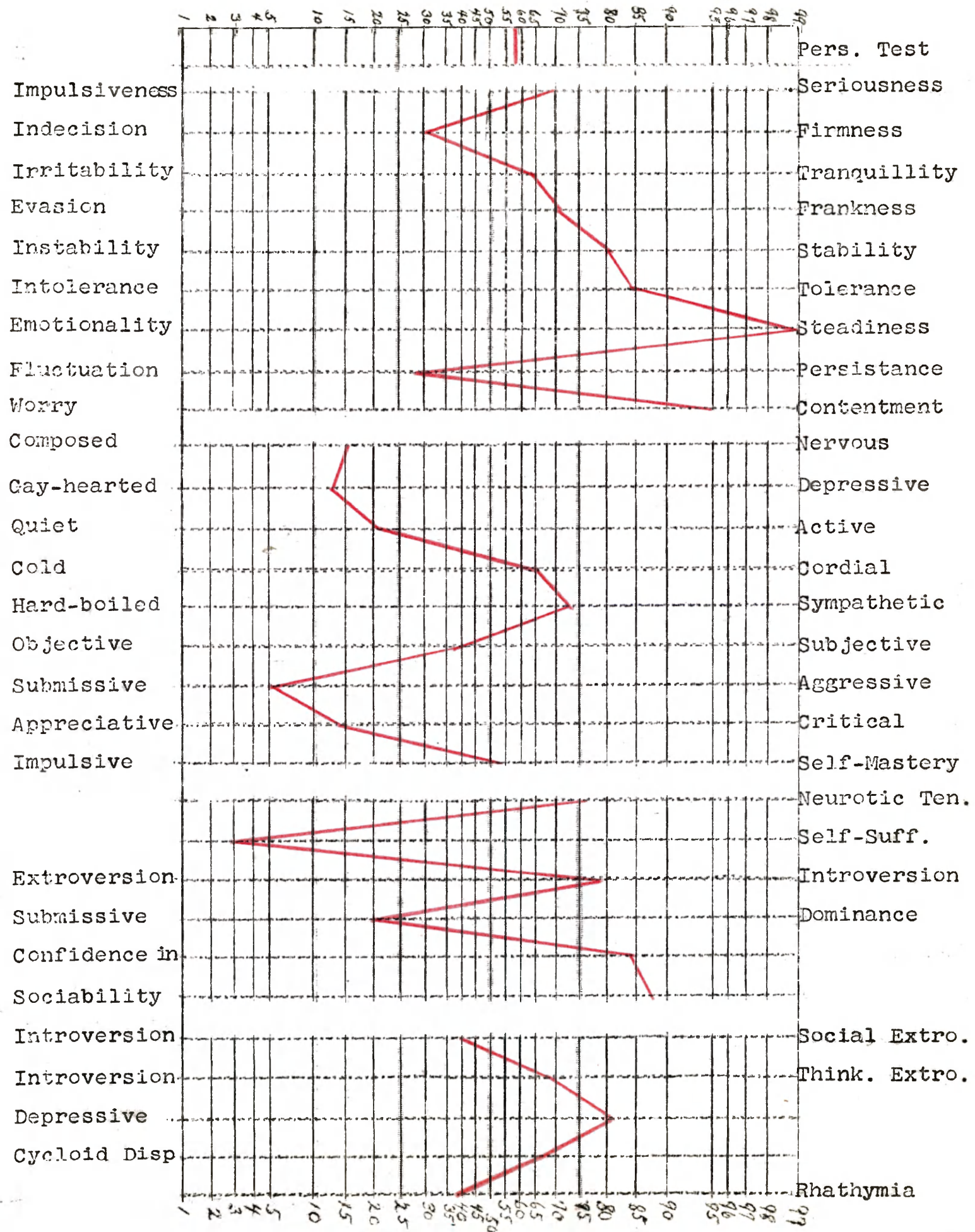


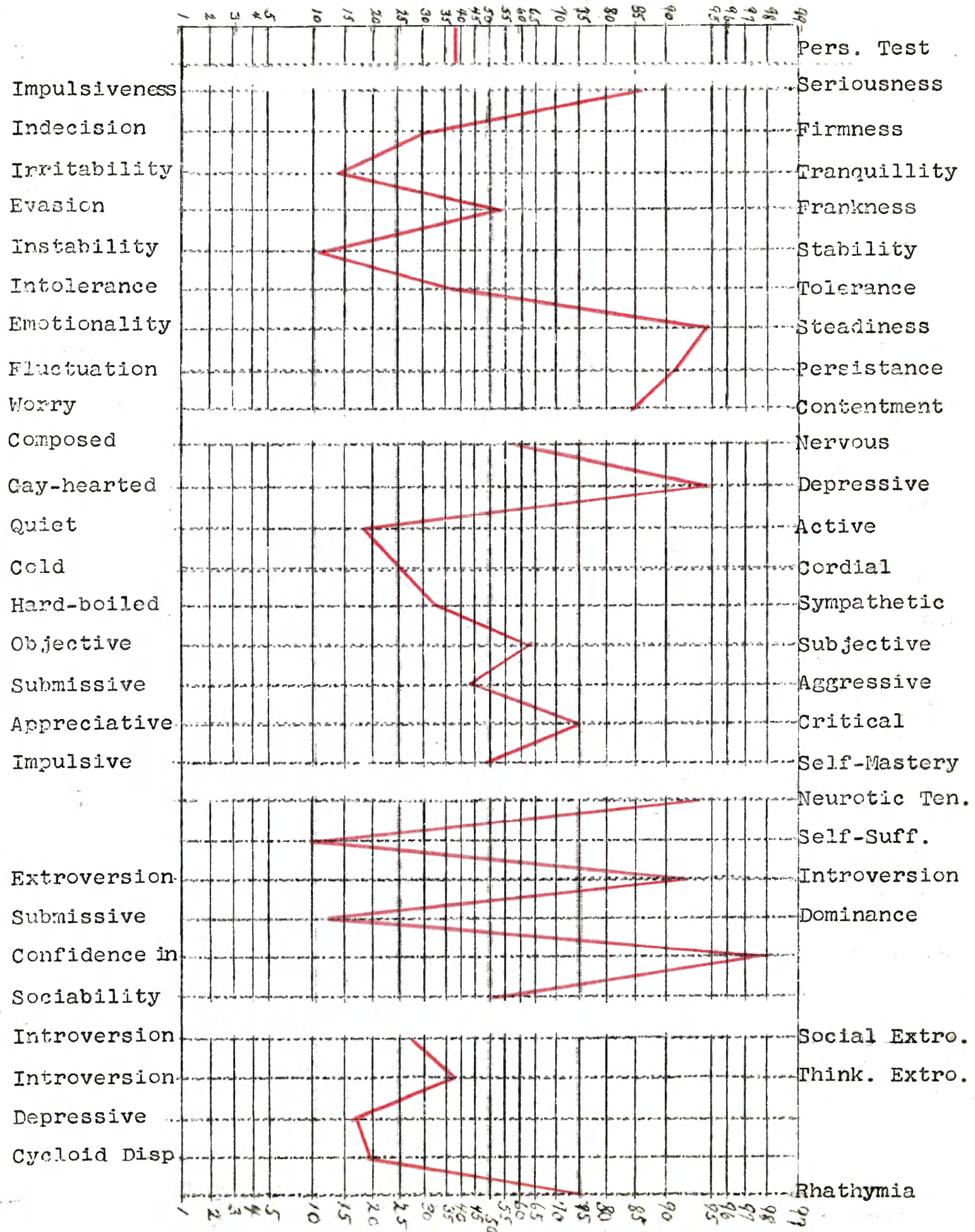




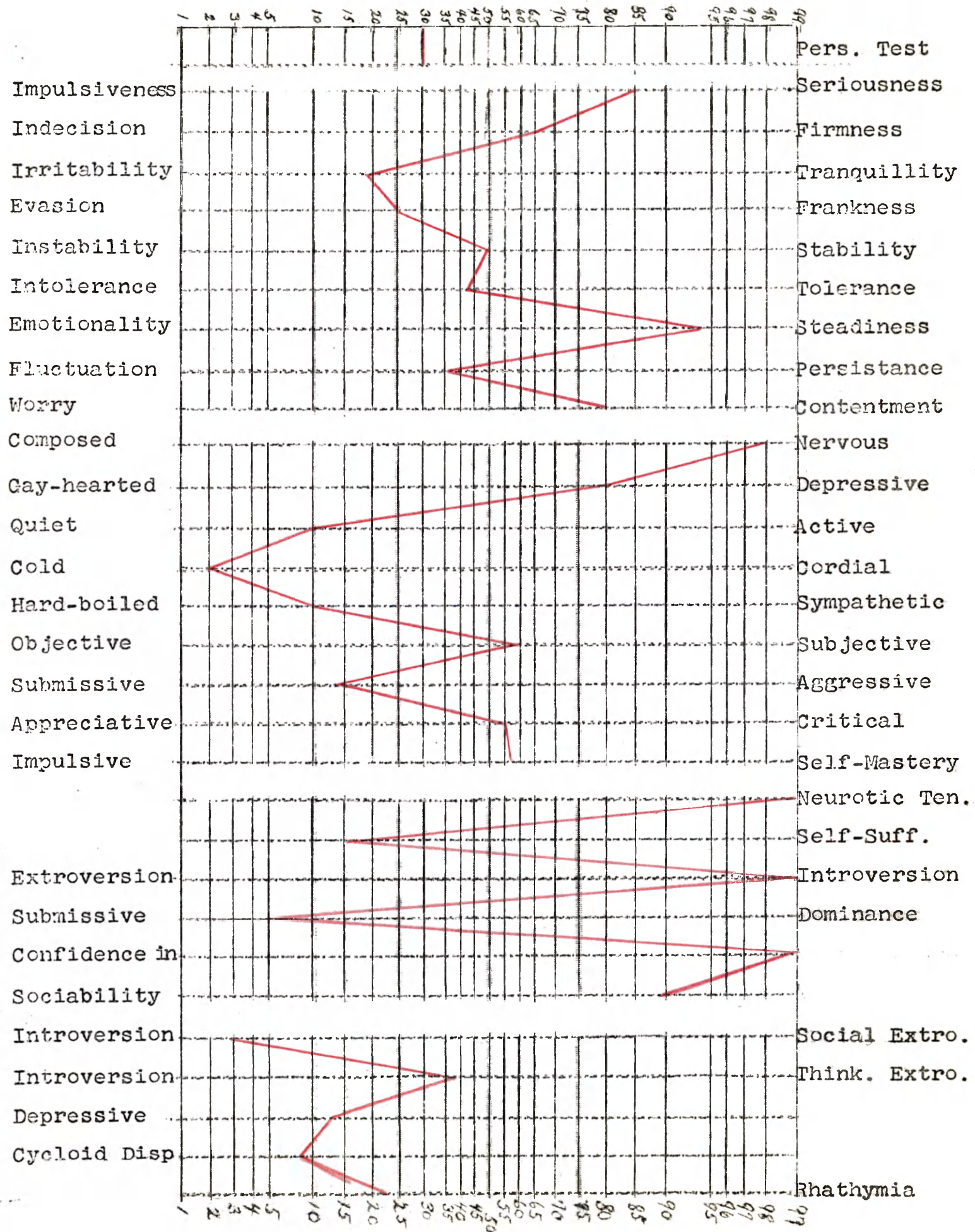












#### APPENDIX C4

PROFILES SHOWING NO MEAN CONFIGURATION

